THE INTENTION OF UNIVERSITI UTARA MALAYSIA (UUM) UNDERGRADUATES TO FURTHER STUDIES: THE INFLUENCE OF FAMILY, ACADEMIC AND INDIVIDUAL-RELATED FACTORS

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ABSTRACT

Education is one of the key elements for a country's growth. The Malaysian government has consistently allocated a huge budget to the education sector every year. As a result of this effort, the number of undergraduates and Master's degree graduates of Malaysia's institutes of higher learning has increased over the years. However, the Malaysian Tracer Study statistics show that the percentages of undergraduates who intend to pursue a Master's Degree has dropped from 78.9 per cent (2007) to 73.3 per cent (2015). The number of Master's Degree graduates of Malaysian universities has shown a drastic fall from 26 per cent (2010) to only 7 per cent (2015). This study aims to determine the factors that influence the intention of undergraduates to pursue a Master's Degree. Three main factors are identified in this study, namely family, academic, and individual-related factors. The study sample is Universiti Utara Malaysia (UUM) graduands (bachelor's degree level) of 2016. Data were collected via a survey using the convenience sampling technique. The questionnaires were distributed to UUM graduands. A total of 447 graduands were included in the study. The methods of analysis include descriptive analysis, preliminary analyses (including missing value analysis, outlier analysis and VIF analysis), and logistic regression. The results of the analyses show that CGPA, scholarship and business-related programs during undergraduate studies are significant in influencing the undergraduates' intention to pursue a Master's Degree. This study suggests that policy makers pay more attention to providing financial aid for postgraduate studies, and university authorities provide more incentives to encourage high performing undergraduates to pursue a Master's Degree.

Keywords: undergraduates, intention, postgraduate enrollment, parental influence, academic factor

ABSTRAK

Pendidikan merupakan salah satu elemen yang penting untuk pertumbuhan sesebuah negara. Kerajaan Malaysia telah secara konsisten memperuntukkan bajet yang tinggi kepada sektor pendidikan setiap tahun. Dengan usaha ini, bilangan mahasiswa dan mahasiswi dan pascasiswazah di institut pengajian tinggi di Malaysia telah meningkat. Walau bagaimana pun, statistik daripada *Malaysia Tracer Study* menunjukkan bahawa peratusan mahasiswa dan mahasiswi yang berminat untuk melanjutkan pelajaran ke peringkat Ijazah Sarjana talah menurun daripada 78.9 peratus (2007) kepada 73.3 peratus (2015). Bilangan graduan pascasiswazah daripada universiti tempatan juga telah mengalami penurunan yang tinggi daripada 26 peratus (2010) kepada hanya 7 peratus (2015). Kajian ini bertujuan untuk menentukan faktor-faktor yang mempengaruhi niat mahasiswa dan mahasiswi untuk melanjutkan pelajaran ke peringkat Ijazah Sarjana. Faktor-faktor yang terlibat dalam kajian ini ialah faktor keluarga, faktor akademik dan faktor individu. Sampel dalam kajian ini adalah graduan Universiti Utara Malaysia (UUM) (peringkat Ijazah Sarjana Muda) pada tahun 2016. Data kajian dikutip melalui soalselidik menggunakan teknik persampelan mudah. Borang soal selidik diedarkan kepada graduan UUM. Kajian ini melibatkan seramai 447 orang graduan. Kaedah analisis yang dijalankan ialah analisis deskriptif, analisis awal (termasuk *missing value analysis, outlier analysis dan VIF analysis)* dan regresi logistik. Keputusan analisis menunjukkan bahawa CGPA, biasiswa dan program yang berkaitan dengan perniagaan di peringkat pengajian sarjana muda adalah signifikan dalam mempengaruhi niat mahasiswa dan mahasiswi untuk melanjutkan pelajaran ke peringkat Ijazah Sarjana. Kajian ini mencadangkan supaya pembuat dasar memberi lebih perhatian kepada penyediaan bantuan kewangan untuk pengajian sarjana dan pihak universiti menyediakan insentif untuk menggalakkan mahasiswa dan mahasiswi yang cemerlang melanjutkan pengajian ke peringkat Ijazah Sarjana.

Kata kunci: mahasiswa/mahasiswi, minat, pendaftaran kemasukan siswazah, pengaruh keluarga, faktor akademik

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LIST OF ABBREVIATIONS

AGR	Association of Graduate Recruiters
BR1M	Bantuan Rakyat 1 Malaysia
CAS	College of Arts and Science
CGPA	Cumulative Grade Point Averages
COB	College of Business
COLGIS	College of Government and International Studies
GPA	Grade Point Average
HE	Higher Education
HECSU	Higher Education Careers Service Unit
HEI	Higher Education Institution
IEB	International Employer Barometer
MARA	Majlis Amanah Rakyat
MAR	Missing at Random
MCAR	Missing Completely at Random
MOE	Ministry of Education
MOHE	Ministry of Higher Education
MQA	Malaysian Qualifications Agency
NASLS	National Student Loan Survey
NHEAP	National Higher Education Action Plan
NHESP	National Higher Education Strategic Plan
OLS	Ordinary Least Square
PHEI	Public Higher Education Institution
PTPTN	National Higher Education Fund Corporation
PVHEI	Private Higher Education Institution

SLID	Survey of Labor and Income Dynamics
US	United States
UUM	Universiti Utara Malaysia
VIF	Variance Inflation Factor

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

Becoming a fully developed country by the year 2020 is one of the vision of Malaysia. More intelligent human capital is needed to become a fully developed country. In 2017, the Malaysian government allocated a huge budget of RM7.4 billion for 20 public universities to ensure that higher education is to be at par with the global standards. A total of RM2.2 billion was allocated by the Malaysian government for scholarships (Ministry of Finance, 2017). With the availability of financial support, Malaysian undergraduates should be encouraged to further their studies. Statistics in the Malaysia Tracer Reports show that the Malaysian undergraduates nowadays have a low intention to further their studies in a Master's Degree. The undergraduate decision making has received less research attention. This study focuses on the influence of academic, family, and individual-related factors.

Education is one of the main components in Malaysia's economy nowadays. The reason is the economy in Malaysia has developed from a production-based to knowledge-based to maintain the competitiveness in the international market. In the process of developing the K-economy, labor and capital must be replaced by knowledge. Malaysia is facing the challenge to develop knowledge workers so that they can have a contribution in the growth of this nation (Mahathir, 1991). The Malaysian government has formed a higher education system as an action to face the nine challenges of Vision 2020. As pointed by the Malaysian Prime Minister, Tun Dr. Mahathir bin Mohamad, we should have the vision to transform Malaysia to become

a fully developed country by the year 2020. Malaysia should not only focus on development in the economic perspective. All the dimensions including politics, economics, social, spiritual, psychology and culture should be focused to become a fully developed country. There are two challenges related to education in achieving Vision 2020, including establishing a fully moral and ethical society with the highest ethical standards and establishing a society with high competitiveness, dynamic and robust. There is no doubt that obtaining a higher level of education assures the competitiveness of a graduate in the labor market (Mahathir, 1991). The higher education system has a role to increase the competitiveness of graduates in Malaysia. Under the higher education system, higher education institutions carry out the role of preparing quality education services in Malaysia. In the implementation of these changes, the Malaysian government has allocated RM11.3 billion to higher education.

Higher Education Institutions (HEIs) are developed to produce intelligent human capital to face the competition in the global education market. In Malaysia, HEIs operate under the authority of the MOHE. Higher education has gone through four stages, as follows: i) education for elites, ii) education for affirmative action, iii) education as and for business, and iv) education for global education (Lee, 2005). The Ministry of Education (MOE) has implemented two blueprints which are the National Higher Education Strategic Plan (NHESP) beyond 2020 and the National Higher Education Action Plan (NHEAP) 2007-2010 (MOE, 2012; MOHE, 2007). Universiti Malaya is the first HEI that was built in 1959. Currently, Malaysia has 20 public universities, 33 polytechnics, 91 community colleges, 70 private universities, 410 private colleges, and 34 private university colleges (MOE, 2012).

Table 1.1 shows the list of public universities in Malaysia. Public universities in Malaysia are categorized into four groups which are i) research universities, ii) comprehensive universities, iii) focused universities, and iv) Malaysian Technical Universities (MOE, 2012).

Table 1.1
Public Universities in Malaysia

Research Universities	Universiti Malaya
	Universiti Putra Malaysia
	Universiti Kebangsaan Malaysia
	Universiti Sains Malaysia
	Universiti Teknologi Malaysia
Comprehensive Universities	Universiti Teknologi MARA
	Universiti Islam Antarabangsa Malaysia
	Universiti Malaysia Sabah
	Universiti Malaysia Sarawak
Focused Universities	Universiti Utara Malaysia
	Universiti Pendidikan Sultan Idris
	Universiti Malaysia Terengganu
	Universiti Sains Islam Malaysia
	Universiti Sultan Zainal Abidin
	Universiti Malaysia Kelantan
	Universiti Pertahanan Nasional Malaysia
Malaysian Technical University Network	Universiti Tun Hussein Onn Malaysia
	Universiti Teknikal Malaysia Melaka
	Universiti Malaysia Pahang
	Universiti Malaysia Perlis

Source: MOE, 2012

The sample in this research are undergraduates who completed their undergraduate studies in Universiti Utara Malaysia (UUM). The UUM undergraduates are not allowed to pursue a Doctoral Degree without a Master's Degree. The Ministry

of Higher Education (MOHE)[1] is the higher education entity that is authorized by the Malaysian government to improve the performance and make Malaysia a center of higher education by the year 2020. Higher education institutions in Malaysia are categorized into two major groups which consist of i) Public Higher Education Institutions (PHEI) and ii) Private Higher Education Institutions (PVHEI).

The Malaysian government has made a tremendous effort to improve the higher education system. One of the efforts is by providing financial support to encourage Malaysian students in accessing higher education learning. Various types of financial support, for instance the National Higher Education Fund Corporation (PTPTN), scholarships and grants, are prepared by the Malaysia government. PTPTN received an allocation of RM5 billion for both undergraduate and postgraduate students. The cumulative scholarships provided by the Malaysian government is up to RM44 billion since 2009. A total of RM2.2 billion is allocated for scholarships provided by the Public Service Department, Ministry of Higher Education and Ministry of Health. The budget for research and development grants has increased from RM235 million to RM400 million for the institutions of higher learning. A total of RM90 million is allocated for the Mybrain Programme for 10,600 individuals to further their studies in a Master's Degree and Doctoral Degree (Ministry of Finance, 2017).

The cost in financing higher education is one of the concerns for students to further their studies. Students come from a high-income, medium-income, or low-

[1] Generally, the pre-tertiary education sector was placed under the jurisdiction of Ministry of Education (MOE), while the higher education sector was placed under the Ministry of Higher Education (MOHE). In May 2013, they were merged as one entity and named the Ministry of Education Malaysia.

income family group. Students who do not obtain a study loan or scholarship have to be "self-funded", which means financing the education cost using their own salary (if they are employed) or their parents' income.

With the availability of financial support, students from different income groups (including high-income, medium-income, and low-income family) are able to study in universities. There is no doubt that financial support could reduce the financial burden of parents in preparing their children to receive a higher level of education. A large number of undergraduates was produced in Malaysia in the recent years. Figure 1.1 shows the trend of the number of undergraduates and Master's Degree graduates produced from 2007-2015. The number of undergraduates produced has increased from 75,525 in 2007 to 122,764 in 2015. This increment is equivalent to 62.5 per cent. On the other hand, the number of Master's Degree graduates produced has a significant increment of 138.7 percent. The number of Master's Degree graduates increased from 8,984 in 2007 to 21,451 in 2015 (Malaysia Tracer Study Report, 2008-2016). There is a large gap between the number of undergraduates produced and the number of Master's Degree. For example, in 2015, the number of undergraduates produced was 122,764 and the number of Master's Degree graduates produced was relatively low at only 21,451. Although there is an increasing trend of the number of Master's Degree graduates produced, the rate of the increment drops. The rate of the increment has dropped from 26 per cent (in 2010) to 7 per cent (in 2015).

However, it cannot be denied that a large number of undergraduates produced will cause strong competition in the labor market. Figure 1.2 shows the trend of the unemployment rate among undergraduates in Malaysia from 2007-2015. Statistics

show that the unemployment rate among undergraduates increased from 24.69 percent in 2008 to 31.15 percent in 2014 (Malaysia Tracer Study Reports, 2008-2016). Given the strong competition, undergraduates who are less competitive are likely to be unemployed. In a survey conducted by JobStreet, 64 percent of employers said graduates are given a fair opportunity in their job interviews. Reasons for the unemployment are the unrealistic salary and benefits demanded. 68 percent of graduates demanded salary which does not match their qualification, and 30 percent of them expect RM6500 as their starting salary (EduAdvisor, 2016).

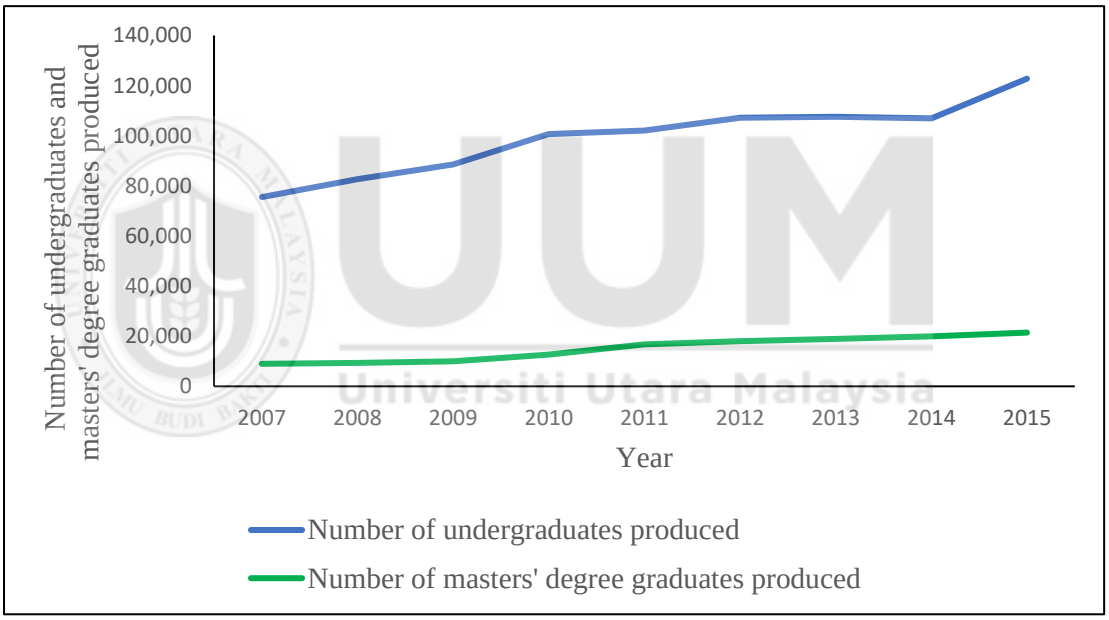


Figure 1.1
Number of undergraduates and Master's Degree graduates produced in Malaysia, 2007- 2015
Source: Malaysian Tracer Study Reports, 2008-2016

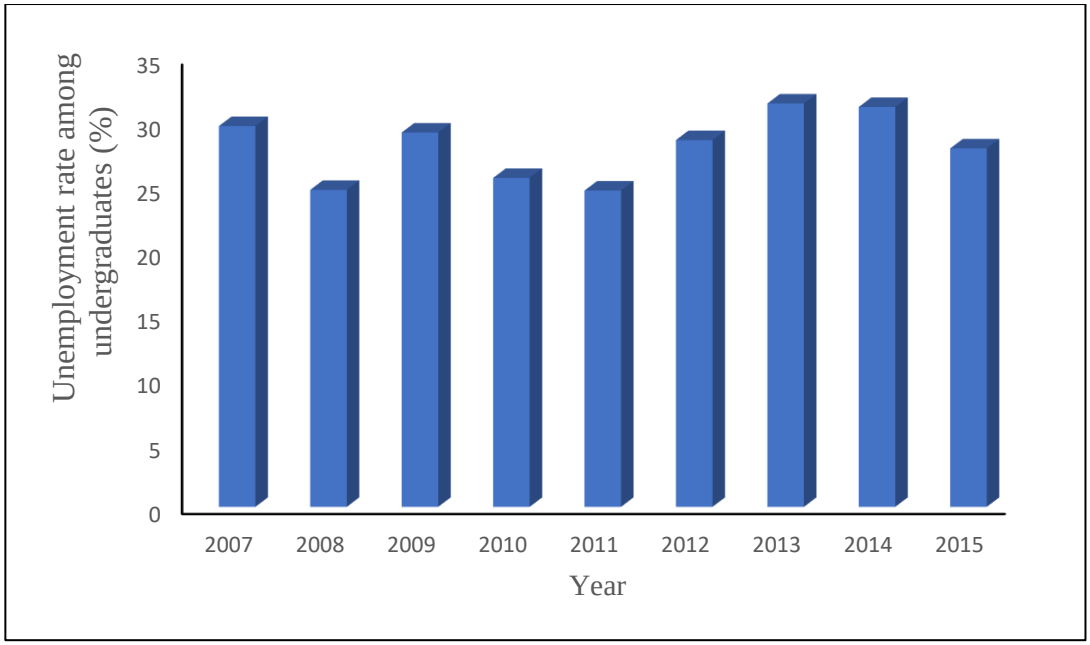


Figure 1.2
The unemployment rate among undergraduates in Malaysia, 2007-2015.
Source: Malaysian Tracer Study Reports, 2008-2016

Unemployed undergraduates should be encouraged to further their studies in a Master's Degree. Having a higher education qualification is one of the advantages of demanding a higher salary. However, Malaysian undergraduates nowadays have low intention to further studies in a Master's Degree. Figure 1.3 shows the percentage of undergraduates who have the intention to further their studies. Statistics show that the percentage of undergraduates who intend to further studies has dropped from 78.9 per cent in 2007 to 73.3 per cent in 2015. Among the undergraduates who intend to further studies, statistics show that undergraduates who graduated with a high CGPA are less likely to further their studies. Figure 1.4 shows the percentage of undergraduates who intend to further studies according to the CGPA achieved. It shows that the percentage of the undergraduates (who graduated with CGPA 3.00-3.49) to further studies is relatively much higher than undergraduates who graduated with CGPA 3.70-4.00. This indicates that undergraduates with a high CGPA nowadays tend to work after the completion of their undergraduate studies. The undergraduates with a lower CGPA

tend to further studies to obtain knowledge at a higher education level, obtain higher academic qualifications, have a better job prospect, and increase the employment chances (Malaysia Tracer Study Reports, 2008-2016).

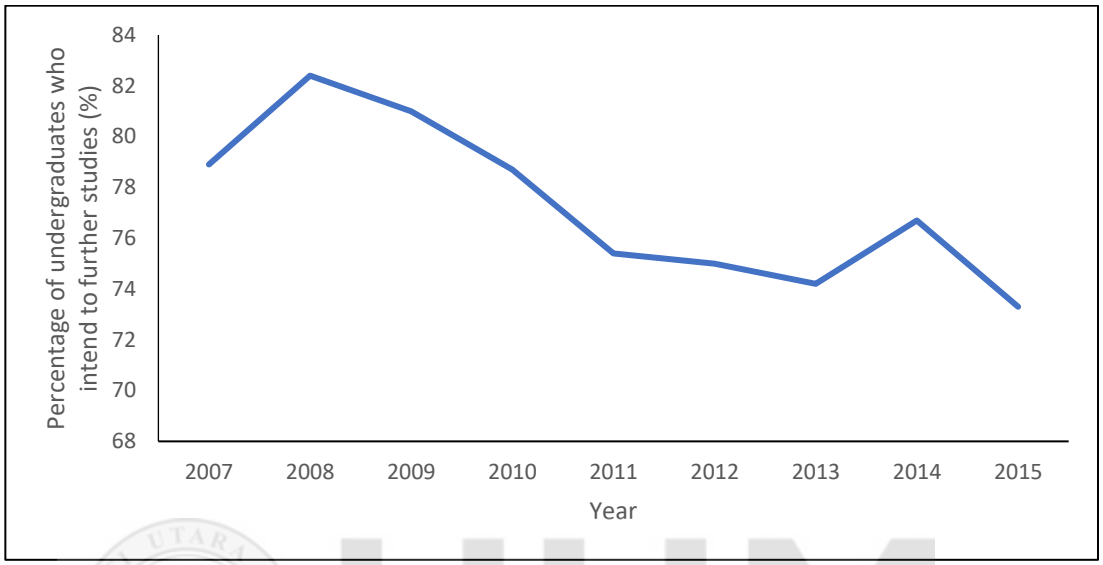


Figure 1.3
Percentage of undergraduates who intend to further studies, 2007-2015
Source: Malaysian Tracer Study Reports, 2008-2016

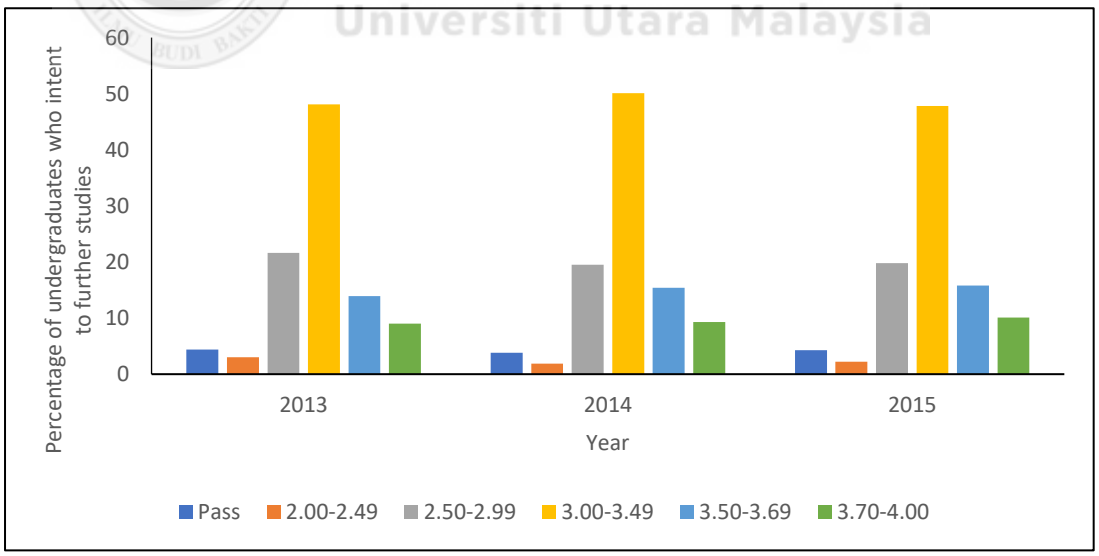


Figure 1.4
Percentage of undergraduates who intend to further studies according to CGPA achieved, 2013-2015
Source: Malaysian Tracer Study Reports, 2014-2016

1.2 Problem Statement

Graduates are the human capital that provides manpower in the labor market. To produce more human capital, the intention of undergraduates to further their studies should be raised. Along with the financial support provided by the Malaysian government through study loans and scholarships, Malaysian undergraduates are encouraged to further their studies in a Master's Degree. With a Master's Degree, graduates are better equipped with the knowledge and skills to be more productive in the labor force. However, the intention among undergraduates to pursue their education at a Master's Degree level had dropped significantly from 82.4 per cent in the year 2008 to 73.3 per cent in the year 2015. Although there is a significant increment in the number of Master's Degree graduates, the rate of increment has dropped (Malaysia Tracer Study Report, 2009-2016).

Public universities in Malaysia are evaluated in six metrics including academic reputation and faculty/student ratio. Academic reputation has the highest weighting among the six metrics. Undergraduates with a high CGPA are important to raise the university's reputation and ranking. However, majority of the undergraduates (i.e. 47.8 percent) that have the intention to further studies are undergraduates with a CGPA of 3.00-3.29. There is only a mere 10.1 percent of undergraduates who obtain a CGPA 3.70 and above who have the intention to further their studies in Master's Degree.

On the other hand, the unemployment rate for fresh graduates (among undergraduates) has been increasing in recent years. As there is low intention to further studies, a large number of undergraduates enter the labor market. Undergraduates with a lower CGPA are less competitive compared to undergraduates with a high CGPA.

Less competitive undergraduates are likely to be unemployed. Unemployed undergraduates should be encouraged to further their studies in order to increase their competitiveness. According to a recent relevant Malaysian study, Che Mohd Zulkifli Che Omar (2016) found that individual factors including working experience and soft skills are the main reason of unemployment among fresh graduates. Employers would pick applicants with a higher CGPA among undergraduates without experience.

Thus, this study focuses on the factors affecting undergraduates' intention to further their studies.

1.3 Research Questions

The main research question in this study is:

i) What are the significant factors that affect the intention of undergraduates to further their studies in a Master's Degree?

Specifically, the research questions in this study are:

i) Does CGPA play a role in affecting undergraduates' intention to further their studies in a Master's Degree?

ii) Does current employment status affect the intention of undergraduates to further their studies in a Master's Degree?

iii) Do undergraduates who receive a study loan and scholarship from the Malaysian government intend to further their studies in a Master's Degree?

iv) Does family income affect the intention of undergraduates to further their studies in a Master's Degree?

1.4 Research Objectives

The main research objective in this study is,

i) To examine the significant factors that affects undergraduates' intention to further their studies in a Master's Degree.

Specifically, the research objectives in this study are,

i) To investigate the role of CGPA in affecting undergraduates' intention to further studies in a Master's Degree.

ii) To examine the impact of employment status on the undergraduates' intention to further their studies in a Master's Degree.

iii) To identify whether undergraduates who received a scholarship and study loan from the Malaysian government intend to further their studies in a Master's Degree.

iv) To investigate the impact of family income in affecting undergraduates' intention to further their studies in a Master's Degree.

1.5 Scope of the Study

The target sample in this study is UUM undergraduate graduands in 2016. This study uses primary data for the analysis purpose. The data collection was held in UUM during the robe collection week and the actual UUM 29th Convocation Day. Questionnaires were distributed to UUM undergraduate graduands. The focus of this study is the factors affecting the intention of undergraduates to further their studies in a Master's Degree after the completion of their undergraduate degree. This study assumes that undergraduates have two possible intentions, which are to further studies and not to further studies. From the literature, there are three main factors which will affect the intention of undergraduates to further their studies, including family,

individual, and academic factors. Family-related factors include parents' education level and parents' income. The individual-related factor is current employment status. Academic-related factors are academic performance, program, and financing method during undergraduate studies.

1.6 Significance of the Study

With the large number of undergraduates produced, the enrollment of postgraduates would increase if undergraduates intend to further their studies. Statistics in the Malaysia Tracer Study Reports show that the percentage of undergraduates who intend to further their studies is decreasing over years.

Firstly, this study contributes to the Malaysian Government as a way to increase the enrollment rate of postgraduates in Malaysia HEIs. From the recent Malaysia Tracer Study Reports, we know that high-performance undergraduates do not intend to further their studies in a Master's Degree. Undergraduates with a high CGPA should be encouraged to further their studies. Intuitively, they would have better achievement in postgraduate studies compared to others. Better achievement in academics and researchers would increase the reputation of a university. This is important for all the universities because universities in Malaysia are evaluated every year according to the student ratio and the academic achievements.

Secondly, the results of this study are the extension of empirical studies. It cannot be denied that there is less attention from previous scholars to investigate the factors that influence students' educational decision to further their studies. Limited studies have been done. This study would provide some ideas and insights to the

Malaysian Government, higher education institutions, researchers and society on the factors that influence the undergraduates' intention to further their studies in a Master's Degree.

Thus, this study attempts to provide some insights on the association between three oriented factors (including family, academic, and individual) and the intention of undergraduates to further their studies in a Master's Degree. The results from this study are crucial for the Malaysia government to formulate policies to encourage undergraduates to further their studies. MOHE would have some ideas from the findings in this study to attract more undergraduates to pursue postgraduate studies. A better understanding of the factors affecting the intention of undergraduates to further their studies helps the Malaysian government in implementing the right policy at the right time.

1.7 Organization of the Study

This study consists of five chapters. Chapter One presents the background of the study, problem statement, research questions, research objectives, scope of the study and significance of the study. The background of the study introduces the higher education system in Malaysia, while the problem statement presents the issues that are associated with this study. Research questions and research objectives show the purpose of conducting this study. The scope of the study presents the area that is covered in this study and significance of the study presents the contributions of this study to the society.

Chapter Two presents the literature review. This chapter consists of previous studies in the same area which provide some ideas in choosing variables. A review of the theoretical studies shows the underlying theories that explain the model in this study. A review of empirical studies provides some ideas on choosing the independent variables in this study.

Chapter Three presents the research method employed in this study. This chapter includes an explanation of the sample used, the data collection process, and the methods employed for analysis purpose in this study. The data is collected by distributing questionnaires. The variables of interest in this study are parents' education background, parents' income, employment status, academic performance, undergraduate studies financing methods, and program during undergraduate studies. Age and gender are controlled variables in this study.

Chapter Four focuses on the estimated results and discussions. The missing data analysis is conducted before regression analysis. Descriptive analysis is used to present the summary statistics of respondents. Association between the dependent variable and independent variables is estimated using a logit model. This model shows the marginal effect of independent variables to the intention of UUM undergraduates to further studies after completing their undergraduate studies. Diagnostic checking was carried out to detect multicollinearity.

Chapter Five presents the conclusion of the analysis. Research questions were answered in this chapter. Also, this chapter presents some recommendation and policy suggestions based on the results of the estimations.

CHAPTER TWO

LITERATURE REVIEW

2.0 Introduction

This chapter presents a literature review of previous studies on the variable of interest in this study. Variables of interest are parents' education background, parents' income, current employment status, academic performance and financing method during undergraduate studies. Generally, all the variable of interests are grouped into three factors, which are family-related, academic-related, and individual-related factors. Family-related factors include parents' education background and parents' income. Academic-related factors include academic performance, financing method and program studied during undergraduate studies. Individual-related factors include current employment status.

This chapter starts with a review of theoretical studies, then review of empirical studies, and followed by literature gap. Section 2.1 presents the review of theoretical studies. This section discussed the underpinning theories in this study. The underpinning theories are the Human Capital Theory, the Consumption-Investment Theory, and the Utility Maximization Theory. Section 2.2 presents the review of empirical studies on families-related factors. Section 2.3 presents the review of empirical studies on academic-related factors. Section 2.4 presents reviews of empirical studies on the individual-related factor. Section 2.5 presents the summary of relevant empirical findings. The findings from the relevant studies are summarized in a table. Section 2.6 presents the conclusion of this chapter.

2.1 Review of Underlying Theories

2.1.1 Human Capital Theory

The human capital theory is a theoretical framework that collects the ideas of cost and benefit in education. Based on the work from a group of economists, including Schultz (1960), Mincer (1958, 1974), Becker (1962), and Woodhall and Psacharopoulos (1997), human capital theory concluded that the most important element to improve the productivity of a population is formal education. This theory focuses on how education improves the efficiency and productivity of labor by increasing their capability of human beings.

Becker (1962) said that human capital plays an important role in the production process. Human capital increases the productivity of workers. Human capital represents the knowledge and skills that workers apply in their work. Opportunity cost is said to be the best measurement of the cost and return on the investment in education. A higher level of education could bring a higher income for an individual. The increment in income that leads to the improvement in living standard and health are also considered as one of the human capital investment. In short, better health performance improves the productivity of labor.

Education plays an important role in the development process of a country. Expenditures in education are said to be a type of investment in the future. A higher level of education provides more employment chances in the labor market and higher earnings for a worker. Thus, there is no doubt that economic grows with education. Higher-educated workers could adapt to the production need. Human capital provides competitive advantage towards skill acquisition. The concept of human capital focuses

on the skills embodied in people and these skills may be improved through education and training (Schultz, 1960).

Classical economists had reviewed the economic value of education by saying that there is a relationship between earning and level of education (i.e. people with higher education always have higher earnings). Education as an investment is the core element in the Human Capital Theory. Schultz (1960), Mincer (1958, 1974) and Becker (1962) are popular scholars in the contribution of this theory. All countries believe that education is an important component of economic growth. Education can be said as a consumer and capital goods. This is because education produces utility to a consumer. It is one of the tools for the development of human resources. As capital goods, education is related to the human capital concept. It is generally accepted by everyone because education creates intelligent human capital and helps to improve the living standards in a society (Schultz, 1960; Mincer, 1958, 1974; Becker, 1962).

The input method or output method can be used to measure the value of education. The input method focuses on the allocation of resources committed by families and students. This method measures the value of education in the concept of accounting. Human capital investment could be seen from the input side, for example, consumption of parents for their children's education, financial support prepared by the government, and employed undergraduates who use their salary to finance higher education costs. On the other hand, the output method focuses on the outcomes of education. The value of investment is measured by the returns of an individual who received more years of education compared to an individual who received fewer years of education. The returns are standard of living, job prospects and future earnings.

Efficiency in the allocation of resources in education can be measured by comparing the education inputs and outputs (Psacharopoulos, 2006).

A version of Mincer's (1974) equation could explain the education investments and returns to education. This model provides a conclusion of the theory of human capital investments on the returns to education. His model is a simple model of education decisions which shows the main tradeoffs in human capital investments. The idea provided is, the additional year of education has an opportunity cost, which is forgone earnings. The benefit of one more year of schooling should be a proportional increase in earnings in the future. The years of schooling is positively related to the wage earns.

Becker (1964) and Mincer (1974) then used the basic tradeoff concept in the Human Capital Theory to explain the ideas of human capital investment and the measurement of the value. The basic tradeoff is between earnings and age.[2] Age and earnings are positively related. The age-earnings curve for the more educated workers is steeper than less educated workers. The more educated workers sacrifice earnings early in their career by receiving education, so their earnings are lower than the less educated workers.[3] The earnings of the more educated workers would exceed the less educated workers because they are more productive at the same age.

The ideas of the importance of education and human capital have a vast number of empirical studies. Investment in education could produce higher quality

[2] The basic tradeoff graph is plotted as age in the horizontal-axis and earnings in the vertical-axis.
[3] In the context of this study, more educated workers referred to undergraduates who further studies. Less educated workers referred to undergraduates who do not further studies.

human capital through knowledge and skills (Okposin *et al*., 2003). In Nigeria, Garba (2002) found a positive relationship between years of education and economic growth by using a panel data that involved different countries. Babalola (2003) examined the contribution of education in economic development by including higher education as an investment. Previous studies proved that higher education in the United States has a significant impact in increasing a person's income. Formal education is not the only way to invest in human capital. This is because workers themselves are capable of learning outside schools; for example, on the job training.

2.1.2 Consumption-Investment Theory and Utility Maximization Theory

The Consumption-Investment Theory and the Utility Maximization Theory are always related to each other. Either treating education as consumption or investment, individuals are maximizing their utility. The concept of treating education as a consumption good focuses on an individual's willingness to consume in education. For example, undergraduates from a high-income family would treat education as consumption because their parents are capable of supporting them financially. On the other hand, the concept of treating education as investment focuses on the future benefits of receiving an education. For example, undergraduates would further their studies to have better job prospects and higher income.

The Earnings Function Method can be used to measure the profitability of investment in education. This method is derived from the Mincer equation. This method was used by Psacharopoulos and Lambropoulos (1992) to examine the additional years of education and earnings difference in Greece. They estimated the rates of return on investment in different levels of education by using data from 1960-

1987 in Greece. The results showed that university education, including Master's Degree and a Doctoral Degree, is significantly associated with earnings.

Postgraduate studies could be a consumption good or investment good. According to Woodhall and Psacharopoulos (1997), there are a few criteria for the evaluation of investment in education. Criteria includes, the direct returns to investment. The direct returns are in terms of the difference between opportunity costs and the expected future benefits. The indirect economic returns are in terms of the external benefits to the society, which includes the private demand for education and other factors that determine the individual demand for education, geographical educational opportunities and the distribution of financial benefits and burdens of education. Education as consumption refers to the costs that an individual is willing to pay, while investment refers to the benefits in the future, in terms of wages. Educational choices are determined by three factors, which are preferences, returns, and costs. Effort, time and money are the costs of attending higher education. The returns from higher education can be monetary and non-monetary. There is no doubt that higher education increases knowledge, skill level and productivity of the individual, and thus brings higher income to an individual in the labor market (Alstadsaeter, 2004).

Education is said to be an investment in the capital because it has monetary and psychic benefits for an individual in the future. In education, psychic benefits always relate to the satisfaction of attending classes, socializing with classmates and obtaining new knowledge. Individual satisfaction from university education is gained from the quality and value of education. Individual satisfaction is also related to social

status. Having a higher education qualification will advance the relative social status within society. As education is considered as an investment, certain costs are needed in the short period which will bring monetary and non-monetary benefits in the future. Personal satisfaction begins with attending classes and remains with the individual as knowledge obtained. Social status starts once an individual completes the studies. Monetary benefits relate to the employment status upon the completion of studies (Schneider, 2007).

As mentioned earlier, the focus of treating education as an investment is on the future benefits and earnings. There are previous studies on explaining the factors that affect the future earnings of an individual after receiving higher education. These factors include years of education received and working experience in the labor market.

Lazear (1977) studied the relationship between education and earnings in US. He found that these two variables are positively related. Education increases an individual's ability to earn a higher income. He found that in his sample, the consumption bad referred to the lower level of higher education (i.e. undergraduate studies), while consumption goods referred to higher levels of education (i.e. Master's Degree and Doctoral Degree). It can be said that education is a normal consumption good. The demand in education increases if an individual has higher income. This is a simple result of the income effect. Alstadsaeter and Sieverytsen (2011) found that graduates in the United States (US) are willing to forego their potential income to enjoy the consumption value of their educational choice. US graduates are willing to pay the consumption value in higher education.

By using the sample in university graduates (N = 832), Anastasia et al. (2016) conducted a survey on the benefits of education. They categorized benefits into three groups, which are economic, social status, and personal satisfaction. Among the three benefits, 57% of the respondents responded that psychic benefit had a higher contribution to the utility gained in university education. Age, program of study, motives, parents' education and foreign language fluency are the variables in this study. The program of studies is the most significant factor in the enrollment of higher education. They found that joy in the education process and the professional opportunities from the program affect the intention in studies. Motivation (i.e. from parents and peers) is related to personal satisfaction in education. Results showed that factors that are significant in their study are grade point average, program and the knowledge of foreign languages. Family environment reflected the motivation of students in higher education level. The findings concluded that graduates perceived higher education as a consumption good.

Oosterbeek and Van Ophem (2000) measured the utility obtained from the net present value of lifetime earnings and the costs involved in education by using the utility function. The utility function is as follows, $U(N, s) = \ln N + a \ln s$, where, U works as the utility index, N works as the net present value of lifetime earnings, s works as the amount of schooling and a works as the weight in the utility function of schooling relative to earnings. They said that there are three situations in the equation, which are, if $a = 0$, there is no utility gain when education is treated as a consumption good, if $a = 1$, consumption and earnings have the same weight, and $a > 1$ when consumption has a higher weight than earnings. They concluded that by increasing the years of education, this would give a higher utility to an individual.

2.2 Review of Empirical Studies on Family-related Factors

(i) Parents' Education Background

In the recent years, there are various literature focused on the relationship between the education level of two generations, which are parents' education level and children's education level. The higher the level of education of parents increases the level of education of the younger generation. This shows that increasing the education today would lead to a better education for the next generation. Intergenerational mobility is one of the measurements. Intergenerational mobility refers to the changes in a family's social position between generations. It refers to the association between the education level of two generations. It is said that parental education is just one of the aspects of family background that has an impact on children's achievement. Most of the parents nowadays have their investments in their child's educational achievements. Investment here refers to the time and money. Parents' interaction time with their children is important because it delivers abilities, aspirations, and values that affect how their children could do in education.

Parents' education is important in influencing the undergraduates' intention to further their studies. Many attitudes about work and careers are formed as a result of the interactions with a family member, especially both parents. This is because family background provides the basis for decision making. However, impact of influence from family members depend on the interaction time. Parents with a higher education background could share the benefits and their experience with their children. A lower education level of both parents affects young generation development (DeRidder, 1990).

Perceived probability of success could also vary with parental education. Parents from a lower educational background did not have confidence in the undergraduates' performance in a Master's Degree after completing their undergraduate studies. They were unlikely to support undergraduates to further their studies. Parents from a lower educational background perceive a higher risk of low performance in higher education (Breen & Goldthorpe, 1997).

Tamara (2002) used the data from the Survey of Labor and Income Dynamics (SLID) to identify the impact of parents' education to the postsecondary (defined as university and college level education) enrollment rate in Canada. She included 1,640 university students who were from age 18 to 21. She found that young Canadians with parents that had a higher level of education were significantly more likely to pursue a postsecondary education (more specifically university education). The probability of a young adult with university-educated parents were almost three times higher than those with parents that did not have a university education background. She added that parents with more education tend to get more involved in their children's education.

Ann, Kimberley and Joseph (2003) studied the effect of parents' education background in correlation to the postgraduate enrollment. They included 10,080 undergraduates who had completed their undergraduate studies in their analysis. In their analysis, they found that parents' education background had a positive impact on the postgraduate enrollment. By using logistic regression, they found that a year increase in parents' education increased the outcome probability of attending a Master's Degree program.

Liu and Morgan (2015) examined 381 students' decision making to further their studies in a Master's Degree in China. They found that parents with higher education experience have a positive impact on undergraduates to have the intention to pursue their studies in a Master's Degree. Parents have an important role in providing motivation for the undergraduates to pursue postgraduate studies. Parents with higher educational degrees are more conscious and pay more attention to the academic skills in their children. However, parents without university-education background did not have a real understanding of the choice process, and thus unable to guide and influence their children's educational choices.

(ii) Parents' Income

It is believed that family income has an impact on the career development of the next generation. Undergraduates from a low-income family tend to start working earlier as compared to others who are from a high-income family. There is a great influence on the educational decision and occupational decision. If there was a negative parental influence, for example, both parents are uneducated and always working hard to earn money, children may decide to start working early. However, parental influence could be positive, whereby children tend to not follow the path of their parents and decide to pursue in higher education to obtain high earning jobs (Mortimer, Zimmer, Holmes & Shanahan, 2002).

Not only parental influence, parents are believed to be the main financial source for undergraduates if they do not receive any study loans or scholarships. Parents' incomes are the financial source, thus parents with a high income could provide better financial support to their children so that they could have more chances

to receive higher education. After graduating from undergraduate studies, undergraduates from low-income families might not have sufficient resources to finance their higher education. They might need to start working and earn their money. This could be due to lack of financial resources or lower educated parents are unwilling to invest in their education in Master's Degree studies. For example, higher education in US is facing challenges including financial support, increase in tuition fees, and modified government policies (Bastedo, Altbach, & Gumport, 2016). This is because all the universities are competing to prove their worth and values (Bok, 2003; Suspitsyna, 2012). Some of the universities have begun to operate with the mission of market-oriented values (Kerr, 1994).

The Malaysia government has conducted a survey on fresh graduates who intend to further studies after completing their undergraduate studies. Statistics from Malaysia Tracer Study Report show that undergraduates from middle-income families are more likely to further their studies. Fresh graduates from low-income families tend to start working to reduce the financial burden of their family. However, undergraduates with high income are more likely to get involved in their family business (MOHE, 2015).

Tamara (2002) used the data from the Survey of Labor and Income Dynamics (SLID) to identify the impact of parent's income to the postsecondary (defined as university and college level education) enrollment rate in Canada. A total of 1,640 university students who were age 18 to 21. The income level in her study were defined into four income quartiles, which are lowest quartile, lower-middle, upper-middle, and highest quartile. In her study, she found that the participation in university education

increases with parents' income. Students with parents in the highest income quartile were more likely to further their studies than those with parents in the lowest quartile.

Zhang (2004) found a positive association between parents' income and the postgraduate enrollment. By using undergraduates in his study, he found that the impact of parents' income was very small. A large increment ($10,000) in the family income is only associated with a small increment in the probability of attending a postgraduate program.

Acemoglu and Pischke (2000) found that the parents' income has a positive association to the attendance of university education. By using the data from the US National Center for Education Statistics, their findings showed that an increase (10 per cent) in the family income increases the probability of attending university by 1.4 per cent.

2.3 Review of Empirical Studies on Academic-related Factors

(i) Academic Performance

Postgraduate studies can be said as the second chance for undergraduates to develop themselves after completing their undergraduate studies. A study found that undergraduate studies make only a little difference in students' ability to apply their knowledge in their writings. It is found that 45% of the graduates made no difference in their writing and critical thinking skills, whereas 36% of the graduates do not show any improvement over their four years' of studying in a university (Liu, Bridgeman & Adler, 2011).

It is believed that academic performance in undergraduate studies could affect the confidence of students to continue in postgraduate studies. Besides the debt incurred in the undergraduates' studies, it is also found that the undergraduates' grade point average (GPA), is a powerful indicator of the students' decision to apply for admission in HEIs. Their GPA provides them with confidence to face the challenges in postgraduate studies. It shows that higher grades in a pure field (i.e. natural science, humanity) are strong factors of pursuing a higher degree. These students believe that a higher level of education could provide them with a higher income in their future careers despite the foregone income and debts (previous study loans). They also show their interest to pursue their further studies (Millett, 2003; Weiler, 1994). Admission in HEIs provides a positive impact to a high number of fresh graduates. Education level has a positive relationship with human capital level. A study found that an increase in education level generates higher income for an individual in the future to cover inflation cost and living costs (Winters, 2011).

There are students who study with strong instrumental motives (i.e. study just to make more money in their future) or hoping to achieve returns with less effort, however they have forgotten the goal to study as much as they can for their own knowledge (Entwistle & Peterson, 2004). In short, policymakers are suggested to compare both institutional goals and students' purpose in studies to enhance the quality of higher education. However, different students have different perspectives and factors which affect their studies.

According to the statistics in Malaysia Tracer Study Report from 2008-2016, there are four main factors that motivate them to further their studies. Fresh graduates

further their studies to obtain knowledge at a higher education level, to obtain higher academic qualifications, to have better job prospects, and to increase the employment chances. Other factors include motivation from family, unemployment, and not prepared to work. Over years, the main factor of fresh graduates wanting to further their studies is because they want to obtain a higher academic qualification (MOHE, 2015).

Ann, Kimberley and Joseph (2003) studied the effect of parents' education background to the postgraduate enrollment. They included 10,080 undergraduates who had completed their undergraduate studies in their analysis. The logistic regression results showed that the CGPA achieved in the undergraduate studies had a positive impact to the postgraduate studies. They found that students who were more likely to pursue a postgraduate education were undergraduates who had performed well in their undergraduate studies. CGPA is a strong predictor of furthering studies. Each one decile increase in CGPA increases the probability of attending a Master's Degree by 13 per cent.

Cormick, Nunez, Shah, and Choy (1999) found a positive relationship between the CGPA achieved and the enrollment in a Master's Degree program. They concluded that undergraduates who graduated with a CGPA of 3.5 or above were at least twice as likely to further their studies compared with those who achieved a CGPA below 2.5.

Zhang (2004) also examined the impact of academic performance on the postgraduate enrollment rate. He found that academic performance is a strong

predictor of the probability of undergraduates to further postgraduate studies. His findings showed that one unit of increase in the undergraduates' GPA is positively associated with almost a 22 per cent increase in the probability of enrolling in a Master's Degree.

(ii) Financing Method (Previous Study Loan and Scholarship)

Study loans and scholarships are available in Malaysia for undergraduates to finance their education. Debt is defined as the amount that undergraduates need to pay back after the completion of their studies. A study loan would be a kind of debt for undergraduates after they have completed their studies. It is a financial burden for them when they start the repayment of their study loan. This would affect their intention to further their postgraduate studies.

The issues of the negative impact of debt among students have been discussed in recent years. Debt burden is one of the constraints for fresh graduates to further their studies. Student loan programs increase the opportunity to access higher education, however, debt burden could limit students' careers. They may choose a higher income job after graduation to pay their study debts (Minicozzi, 2005). In America, a vast number of students invest in their educational growth to have a higher academic qualification. In a survey conducted by the National Student Loan Survey (NASLS), 70% of the students responded that previous study loans are an important concern for them to pursue postgraduate education. Students are likely to believe that the benefits of study loans to further their studies is greater than their debt burdens (Baum & O'Malley, 2003).

In the context of Malaysia, statistics from the Malaysia Tracer Study Report show that fresh graduates with study loans are more likely to further their studies. There were 45.4% (in 2013), 46.5% (in 2014) and 45.8% (in 2015) of fresh graduates who said that they have plans to further their studies. These percentages were higher than fresh graduates who obtained a scholarship and self-funded as their financing method in their first degree.

Millet (2003) conducted a study on the impacts of undergraduate study loan to the postgraduate enrollment. By involving 1,982 undergraduates in US, he found that undergraduate debt was a significant variable to influence the postgraduate enrollment. The probability of undergraduates who had debt were less likely to study a postgraduate program. Specifically, the probability of undergraduates with a study debt in the range of $5,000 to $9000 had 1.6 times lower odds of attending postgraduate studies compared to those who had no undergraduate debts.

Cormick, Nunez, Shah, and Choy (1999) conducted a study on the impact of study debts on the postgraduate enrollment. A total of 11,192 undergraduates were included in their study. Undergraduates who had high levels of debts from their undergraduate education were less likely to pursue graduate studies. They found that the debts in undergraduate studies may discourage students from furthering their education.

Baum and Saunders (1998) included 1,098 fourth year undergraduates in their analysis who were study loan borrowers in US. In their survey, about 20 per cent of the respondents changed career plans due to the student loan debt. The assumption is

made that indebtedness may cause an individual to change their plans including drop out of college, attend graduate school, and career plans.

2.4 Review of Empirical Studies on Individual-related Factor

(i) Current Employment Status

Statistics from the Malaysia Tracer Study Report show that unemployment among undergraduates in Malaysia is an increasing trend. Hence, the current employment status is believed to be one of the factors that affect the intention of undergraduates to pursue their studies. Master's Degree studies can be considered as a kind of investment in time and cost. Self-funded postgraduate students treat postgraduate studies as an investment so that they are more likely to have a different impact as compared with their friends who do not choose to pursue their studies (HEFCE, 2013). Postgraduate Taught Experience Survey (PTES) was conducted by Bennett and Turner (2012) to investigate the factors that motivated undergraduates to participate in postgraduate studies. These motivating factors are i) improve employment prospect, ii) personal interest, iii) obtain a higher level of qualification and iv) meet the requirement of the current job.

The International Employer Barometer (IEB) is an independent study on the need and perception for employers on graduates. Results showed that the skills that are preferable to employers nowadays include "soft" and "hard" skills. The results from their survey showed that employers view soft skills (in terms of social skills) as more important than their degree qualification. 85% of the employers said that soft skills including communication skills and leadership skills are the most important capabilities that graduates should have. In the 1990s, the Association of Graduate

Recruiters (AGR) found the same results, saying that soft skills are important (Archer & Davison, 2008).

Unemployed undergraduates should be encouraged to further studies to strengthen their skills including communication and soft skills. Employers are likely to pay a higher salary to more educated workers because their productivity is likely to be greater than the less educated. Bredee (2006) found that students with a higher income received support from the company in terms of financial. In terms of gender, the percentage of male students in full-time employment is higher than female students. This implies that men had more benefits and financial support from employers (Brennan, Mills, Shah & Woodley, 2000). This result was supported by Woodley (2004), women were less likely to have their fees paid by employers. In the perspective of ethnicity, 51% of white students received financial support from employers compared to 15% of other students (Brennan *et al*., 2000). Students who are employed and intended to further their studies received financial support from their employers. 83% of the students who were studying for future job prospects were supported by employers to pay their fees (Bredee, 2006).

2.5 Summary of Relevant Empirical Studies

Table 2.1 shows the summary of empirical studies on the factors affecting students' intention to further their undergraduate studies, while Table 2.2 shows the summary of empirical studies on the factors affecting students' intention to further their postgraduate studies. The summary focuses on the intention of students to further their undergraduate and postgraduate studies. In the context of family-related factors, previous studies showed that parents' education background could affect a student in

their education decision making. Parents' education background has a larger impact than parents' income. In the context of academic-related factors, academic performance is a strong predictor and financing methods could affect the intention of undergraduates to further their studies. If the study loan obtained during undergraduate studies become study debts after the completion of studies, undergraduates are less likely to further their studies due to the negative impacts of the study loan. In the context of an individual-related factor, employed undergraduates are more likely to further their studies because they receive financial support from their employer.

Table 2.1

Summary of relevant empirical studies on factors affecting students' intention to study in the undergraduate studies

Authors	Context	Dependent Variable	Interest Independent Variable	Findings
Tamara (2002)	Family-related factor	University participation	Parents' education background	Young Canadians who parents with a high level of education were significantly more likely to pursue a university education.
Tamara (2002)	Family-related factor	University participation	Parents' income	There is a positive impact of parents' income, students with high income parents are more likely to pursue a university education.
Acemoglu & Pischle (2000)	Family-related factor	University education participation	Parents' income	The parent's income has a large and positive impact to the attendance of university education.

Table 2.2

Summary of relevant empirical studies on factors affecting students' intention to study in the postgraduate studies

Ann, Kimberley & Joseph (2003)	Family-related factor	Postgraduate enrollment	Parents' education background	There is a positive impact of parents' education background and postgraduate enrollment.

Table 2.2 (Continued)

Summary of relevant empirical studies on factors affecting students' intention to study in the postgraduate studies

Liu & Morgan (2016)	Family-related factor	Postgraduate education decision	Parents' education background	Parents with higher education background able to influence the education decision of undergraduates to pursue study in the postgraduate education.
Zhang (2004)	Academic-related factor	Postgraduate enrollment	Parents' income	Family income has a small and positive impact to the postgraduate program enrollment.
Ann, Kimberley & Joseph (2003)	Academic-related factor	Postgraduate enrollment	Academic performance	The CGPA achieved in undergraduate studies is positive associated to the postgraduate enrollment.
Zhang (2004)	Academic-related factor	Postgraduate enrollment	Academic performance	The undergraduate CGPA is a strong predictor of undergraduate to further studies in a Master's Degree.
Millet (2003)	Academic-related factor	Postgraduate enrollment	Undergraduate loan debt	The undergraduate loan debt is significant to influence undergraduates' intention to further studies in a Master's Degree. Undergraduates with study loan debt were less likely to further studies in a Master's Degree.

Table 2.2 (Continued)

Summary of relevant empirical studies on factors affecting students' intention to study in the postgraduate studies

Cormick, Nunez, Shah, and Choy (1999)	Academic-related factor	Postgraduate enrollment	Undergraduate loan debt	The undergraduates with a high level of study loan debt were less likely to further studies in a Master's Degree.
Baum & Saunders (1998)	Academic-related factor	Postgraduate enrollment	Undergraduate loan debt	The undergraduate studies loan debt affects an individual's plan to attend graduate school.
Zhang (2004)	Academic-related factor	Postgraduate enrollment	Program	Undergraduates who major in a business program are less likely to further studies in a Master's Degree.
Bredee (2006)	Individual-related factors	Undergraduate further studies intention	Employment status	Employed undergraduates are likely to further studies because they received financial support from their employer.

2.6 Conclusion

This chapter provides relevant literature on the theories and variables used throughout this study. Underlying theories are the Human Capital Theory, the Consumption-Investment Theory and the Utility Maximization Theory. The empirical review of literature in this chapter focuses on the variables of interest. The findings from this review reveal a lack of significant literature on the intention of undergraduates to further studies. Up to date, there is lack of literature considers the role of employment status. This study fills the gap by including employment status as one of the variables of interest. The next chapter discusses the data and methods for this study.

CHAPTER THREE

METHODOLOGY

3.0 Introduction

This chapter presents the method used during the data collection and regression methods in this study. It starts with Section 3.1 which shows the theoretical framework of this study. Section 3.2 presents the econometric model of this study. This study uses a logit model to analyze the data collected. Section 3.3 presents the flow of the data collection process of this study while Section 3.4 presents the justification of variables in this study. It explains the measurement of each variable.

3.1 Research Framework

Figure 3.1 shows the research framework of this study. The research framework is developed based on three underlying theories, which are the Human Capital Theory, the Consumption- Investment Theory and the Utility Maximization Theory. The Human Capital Theory discusses the costs and benefits of the investment in human capital. The Consumption-Investment Theory discusses the cost and benefits on education. The focus of these two theories is different. The Human Capital Theory focuses mainly on investment, while the Consumption-Investment Theory focuses on the motives of having higher level education to maximize an individual's utility. The motives of further studies could be consumption and investment motive.

In this study, the association between the intention of undergraduates to further their studies and family-related variables could be explained based on the Human Capital Theory and Consumption-Investment Theory. Having both a higher level of

educational background and higher family income, parents could send their undergraduates to receive a higher level of education. This is because they have the information and experience about higher education. Parents with high income treat education as a consumption because they can afford to finance the costs of higher education. However, parents from a low educational background and low-income group would treat higher education (i.e. Master's Degree studies) as an investment. They hope to increase their standard of living because they believe that higher education would increase the income of their children. Individual-related factors and the intention of undergraduates to further their studies could be explained by the Consumption-Investment Theory and the Utility Maximization Theory. Employed undergraduates would treat education as a consumption. However, unemployed undergraduates would treat education as an investment because they hope to secure a job based on a higher-level education qualification. All the individual-related factors are related to the Utility Maximization Theory because the individual makes the decision to maximize their own utility.

This study uses a logit model for estimation. The dependent variable in this study is the intention of undergraduates to further their studies in a Master's Degree after completing their undergraduate studies. It is a binary dependent variable where the outcome could be to further studies, or not to further studies. Having reviewed the underlying theories and relevant literature, this study uses three main related factors, which are family-related factors, individual-related factors, and academic-related factors. Family-related factors include parents' education background and parents' income. Academic-related factors are CGPA, financing method and program studied

during undergraduate studies. The individual-related factor is the current employment status. Age and gender are control variables.

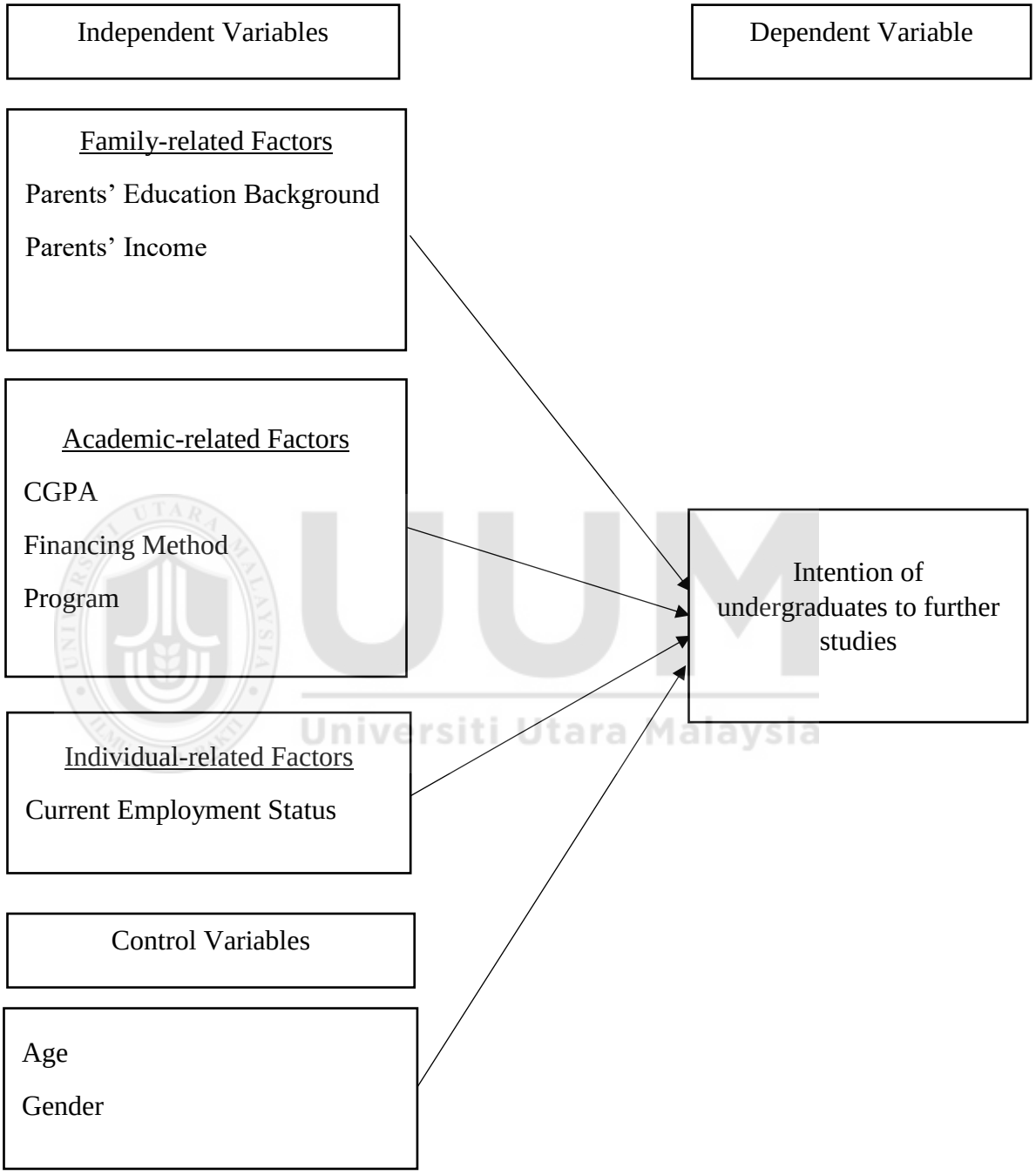


Figure 3.1
Research Framework

3.2 Model Specification

The best regression model for binary dependent variables is the logit model (Long & Jeremy, 2001). The logit model is employed in this research because it restricts the value of a dependent variable in between zero and one. The dependent variable in this research is considered as binary dependent variables which have two values, coded as 0 (not to further studies) and 1 (to further studies).

To achieve research objectives in this study, following econometric model is developed:

$$Y = \beta_0 + \beta_1 PEDU_i + \beta_2 PI_i + \beta_3 CGPA_i + \beta_4 SL_i + \beta_5 SCH_i + \beta_6 EMP_i + \beta_7 BRP_i + \beta_8 FEM_i + \beta_9 AGE_i + \varepsilon_t \quad (3.1)$$

Where,

Y	= The intention of undergraduate Graduands
β_0	= Intercept
β_i	= Coefficients to be estimated, i = 0, 1, 2, 3, ….., 12
PEDU	= Parents' education background
PI	= Parents' income
CGPA	= Cumulative Grade Point Average
SL	= Study loan
SCH	= Scholarship
EMP	= Employment status
BRP	= Business-related program
FEM	= Female
AGE	= Age

ε_t = Error term

There are four model specifications in this study. Equation (3.1) is the formal regression model of this study (as model specification 4), which includes all family-related, academic-related, individual-related variables, and control variables. Another three models regressed each-related factor separately.

The dependent variable *y* has binary outcomes, which takes one of two values. In introductory statistics, this study describes the outcome of undergraduates' intention after graduating from their undergraduate studies where intend to further their studies leads to y = 1 and occurs with probability *p*.

In this study, the probability is transformed into the odds,

$$\frac{\Pr[y=(1|X)}{\Pr[y=(0|X)} = \frac{\Pr[y=(1|X)}{1-\Pr[y=(1|X)} \qquad (3.2)$$

$\Pr[y = (1|X)]$ and $\Pr[y = (0|X)$ mean that the intention of undergraduates to further studies is influenced by a group of independent variables, for example, CGPA and current employment status. The odds indicate how likely undergraduates choose to further their studies (i.e. y =1), relative to how undergraduates are unlikely to further their studies (i.e. y = 0) and range from 0 when $\Pr[y = (1|X)]$ = 0 to ∞ when $\Pr[y = (1|X)$ = 1. The log of the odds, known as the logit, ranges from -∞ to ∞. This suggests a model that is linear in logit:

$$\ln\left(\frac{\Pr[y=(1|X)\,]}{1-\Pr[\,y=(1|X)]}\right) = \boldsymbol{x\beta} \qquad (3.3)$$

$$\Pr[y = (1|X)\ ] = \frac{\exp(\boldsymbol{x\beta})}{1+\exp(\boldsymbol{x\beta})} \qquad (3.4)$$

where x is the vector independent variables and β is the vectors of coefficient.

By including all the explanatory variables, a logit model is developed as shown in (3.4).

$$y_i = 0 \text{ if } y_i^* < 0 \qquad (3.5)$$

$$y_i = 1 \text{ if } y_i^* > 0 \qquad (3.6)$$

Results with zero value as mentioned in (3.5) are observed as y = 0, which means undergraduates choose not to further studies, and vice versa. y_i^* is the latent variable in the model, also known as the unobserved variable. Let y = 1 if an undergraduate has intention to further their studies and y = 0 if otherwise.

The marginal effect is used to describe the association between a variable and the outcome probabilities. Marginal effect shows the impact of a variable while all other variables are held constant. The interest lies in determining the marginal effect of a change in the independent variable on the conditional probability that y = 1 (Cameron and Trivedi, 2005).

For continuous independent variables, the marginal effect shows the instantaneous rate of change. The rate of change is similar to the change when P (Y=1) as X_k changes, holding other X_k constant. The continuous variables in this study are parents' income, CGPA, and age. For example, the impact of one unit increase in

CGPA to the outcome probabilities of undergraduates to further their studies. For categorical variables, the marginal effects show how P(Y=1) is predicted to change as X_k changes from 0 to 1, holding all other variables constant. Categorical variables in this study are parents' education level, undergraduates studies financing method, program, employment status, and age. For example, the marginal effect shows the impact of employment status to the outcome probabilities of an undergraduate to further their studies.

Before conducting the logit regression analysis, data cleaning and data screening are conducted to check the existence of missing values in the dataset. The diagnostic test is carried out before the regression of the logit model. Variance Inflation Factor (VIF) test is used to check the existence of multicollinearity.

3.3 Data

The data in this study is obtained through questionnaires and online survey. Questionnaires were distributed to UUM undergraduate Graduands during the UUM robe collection week. Online survey is conducted after the robe collection week. Thus, the data in this study is considered as a primary data. The list of the selected questions in the questionnaires is attached as Appendix A.

The stages in the selection of a sample started with defining the target population. The target population of this study is UUM undergraduate. Since the focus of this study is to examine the intention of UUM undergraduates to further studies in a Master's Degree, the sampling frame exclude undergraduates who have not finished

their undergraduate studies. The target sample is the UUM undergraduate graduands who have completed their undergraduate studies.

This study uses the convenience sampling method for data collection. This is a sampling by obtaining information and data from the target sample that is conveniently available (Zikmund, Babin, Carr, & Griffin, 2009). Although the UUM undergraduate graduands were divided into five groups by the UUM Academic Affairs Department, questionnaires were distributed to all the UUM graduands who came to claim their graduation robe. The total UUM undergraduate graduands is 5225. According to Krejcie and Morgan (1970), with the population size of 5225, the suggested sample size is 361.

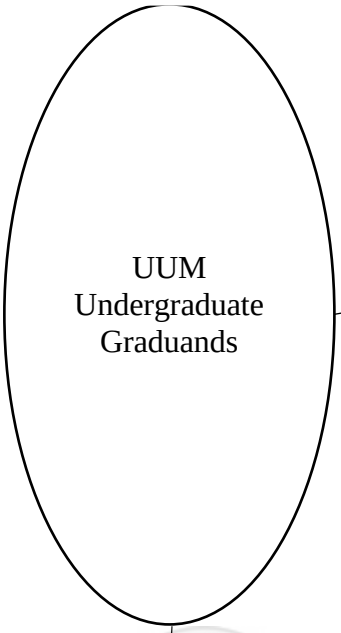
Figure 3.2 shows the data collection process of this study. The target sample was divided into five groups according to their program. The robe taking schedule was obtained from the UUM Academic Affairs Department. Group 1 is undergraduate graduands from Decision Science, Business Mathematics, Industrial Statistics, Public Management, and Development Management. Group 2 is undergraduate graduands from International Business Management, International Affairs Management, Law, Social Work Management, Counselling, Communication, Multimedia, Technology Media, and Information Technology. Group 3 is undergraduate graduands from Tourism Management, Hospitality Management, Accounting and Accounting Information System. Group 4 is undergraduate graduands from Muamalat Administration, Islamic Finance and Banking, Business Administration, Human Resource Management, Marketing, and Entrepreneurship. Group 5 is undergraduate graduands from Economics, Agribusiness Management, Finance, Banking, Risk

Management and Insurance, Technology Management, Operation Management, and Business Administration (Logistics & Transportation). The complete schedule of robe collection week is attached as Appendix B.

Data collection started with a pilot test with 11 graduands in October 2016. The purpose of conducting a pilot test is to make sure that the flow of questions involved are clear and understood by respondents. The actual survey started in November 2016. Questionnaires were distributed during the robe collection week and UUM convocation days. 5 days were spent for the actual survey during the robe collection week. During the first day of data collection, the number of target sample was 203 graduands, whereby 40 respondents responded to the questionnaire, and the response rate was 19.7 per cent. The number of target sample was 592 graduands on the next day, and 119 respondents responded to the questionnaire, with a response rate of 20.1 per cent. The response rate for the following days was 13.5 percent, 15.7 percent, and 24 percent. The total number of the returned questionnaires in these 5 days was 417.

The 29th UUM Convocation was held for 5 days, and questionnaires were distributed to the undergraduate graduands for that duration. The total number of the returned questionnaires was 131. Questionnaires were not distributed to the representative of graduands. The online survey was conducted through email. A URL link of the questionnaires was sent to graduands who did not come to collect their graduation robe. The number of questionnaires received in the online survey was 162. Thus, the total number of questionnaires received from the actual survey and online survey was 710 (i.e. 417 + 131 + 162).

Target Sample



Group	Date	Questionnaires Collected	Response Rate (%)
Group 1	7/11/2016	40	19.7
Group 2	8/11/2016	119	20.1
Group 3	9/11/2016	48	13.5
Group 4	10/11/2016	90	15.7
Group 5	11/11/2016	120	24.0
UUM 29th Convocation	12/11/2016 – 16/11/2016	131	
Online Survey	17/11/2016 – 12/1/2/2017	162	
Total		**710**	

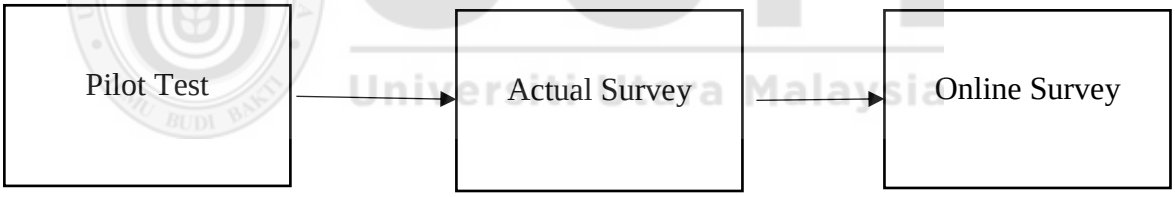


Figure 3.2
Data collection process

3.4 Justification of Variables

Table 3.2 shows the variables' description in this study. The dependent variable, *Y*, will be constructed based on the undergraduate graduands responses of their intention after completing their undergraduate studies. The binary dependent variable in this study is the intention of undergraduates (i.e. intent to further studies, and not to further studies).

Three sets of explanatory variables, and two control variables were used in this study, as listed in Table 3.2. The first set of variables capture how family-related factors influence the undergraduates' intention to further their studies. Parents' education background is defined as both parents' highest education level. The education level in this study covers from primary level to higher education level. The lowest level of formal education is "no formal education" and the highest education is a PhD degree. Parents' education background worked as a dummy variable. It is measured by whether an undergraduate has university-educated parents. Parents' income is defined as both parents' monthly income. Parents' income in this study is measured in terms of RM and is the combination of father's monthly income and mother's monthly income.

The second set of the explanatory variable is academic-related variables which include academic performance, financing methods and program studied during undergraduate studies. Academic performance is measured in terms of CGPA. CGPA is the average grade points achieved by undergraduates in the whole course. Financing method is defined as undergraduates' financial sources during undergraduate studies. Undergraduates would have financial support from government and parents. Financial support from the government are study loans and scholarship. Self-funded is defined as financial support from parents or savings of undergraduates themselves. There are three main colleges in UUM, namely the College of Business (COB), the College of Arts and Science (CAS), and the College of Government and International Studies (COLGIS). There are many programs offered in UUM. In this study, program is categorized as business-related programs (i.e. Economics, Finance and Banking) and non-business-related programs (i.e. Social Work Management and Counselling).

The third set of the explanatory variable is the individual-related variable which includes employment status. Employment status is defined as employed and unemployed. Undergraduates who are working full-time, part-time, or self-employed are considered as employed. Undergraduates who do not obtain any jobs and are economically inactive are considered as unemployed. Age and gender are control variables. The respondents in this study are aged between 25-30 years old, including female and male from different ethnics.

Table 3.2
Variables' description

Variable	Description	
Dependent variable		
Y	Intention of undergraduates to further studies (ITFS)	1 if intend to further studies; 0 otherwise
Explanatory variables		
Family-related variables		
PEDU	Parents' education level	1 if having university-educated parents; 0 otherwise
PI	Parents' income	Measured parents' monthly income (in RM)
Academic-related variables		
CGPA	Cumulative Grade Point Average	Measured by the academic performance (CGPA achieved) during undergraduate studies
SL	Study loan	1 if received study loan (during undergraduate studies); 0 otherwise
SCH	Scholarship	1 if received scholarship (during undergraduate studies); 0 otherwise

Table 3.2 (Continued)
Variables' description

BRP	Business-related program	1 if in business discipline of study (during undergraduate studies); 0 otherwise
Individual-related variables		
EMP	Employed	1 if employed; 0 otherwise
Control variables		
FEM	Female	1 if female; 0 otherwise
AGE	Age	Years of age

Note: *PEDU, SL, SCH, EMP, BRP, and FEM are dummy variables. PI, CGPA and AGE are continuous variables.

3.5 Conclusion

This chapter presented the model and method that used in this study. This study uses the logit model for data analysis. Diagnostic test that employed in this study is VIF test. The data collection process and variables are explained in detail. Next chapter presents the analysis results.

CHAPTER FOUR

RESULTS AND DISCUSSION

4.0 Introduction

This chapter presents the results of the data analysis. There are six sections in this chapter, including the results of data cleaning, data screening, descriptive analysis, and inferential analysis. Section 4.1 presents the results of data cleaning and data screening. The number of missing values and outliers are presented in this section. Section 4.2 presents the results of descriptive analysis. This section presents the summary statistics of respondents. Section 4.3 presents the results of diagnostic checking, while Section 4.4 presents the results of the logit model of the 4 model specifications. Model specification (1) includes family-related factors, model specification (2) includes academic-related factors, model specification (3) includes individual-related factors, and model specification (4) includes all the variables of interest. Section 4.5 presents the interpretation of model estimation results. Section 4.6 presents the conclusion of this chapter.

The total number of questionnaires collected was 710. Out of the total 710 questionnaires, 217 questionnaires were excluded due to incomplete information, and 10 questionnaires were excluded due to the presence of outliers. Outliers were excluded to assure the precision of the analyzed results. Thus, 447 questionnaires

were usable in this study. This sample size is sufficient for the analysis purpose of this study.[4]

4.1 Data Cleaning and Data Screening

Data cleaning includes the discussion of missing data and outliers. Missing data is one of the problems in data analysis, in which the data is collected using questionnaires. The seriousness of the problem depends on the missing data percentage. Table 4.1 presents the missing value analysis result. There were 13 questions in the questionnaire, and the number of UUM undergraduates who responded to the questionnaire were 447. Parents' income has 103 missing values, and CGPA has 9 missing values. 1.93 per cent of the data was missing in the dataset.[5] If the missing values reach a rate of 5% or less, it needs to be replaced. It is suggested that the mean substitution is the easiest way (Tabachnick & Fidell, 2007). However, the missing values are not replaced by the mean value. This is because substitution of the mean value of parents' income and CGPA is appropriate in this study. Undergraduates probably did not answer those questions because they were unsure of their parents' income and did not feel comfortable in mentioning their CGPA. For example, undergraduates with low CGPA choose not to answer their CGPA.

There are two key missing data mechanisms in econometric, namely, missing at random (MAR) and missing completely at random (MCAR). In MAR, the assumptions are that the probability of a missing value does not depend on its value

[4] The population size of this study is 5225 UUM undergraduate graduands. According to Krejcie and Morgan (1970), with the population size of 5225, the suggested sample size is 361. Thus, the number of sample size in this study is sufficient for the analysis purpose.
[5] The percentage of the missing values is obtained by dividing the total number of missing values by the total number of data points multiplied by 100.

but may depend on some other value. On the other hand, MCAR is a special case of MAR. MCAR means that the probability of missing data of a variable does not depend on its own value or the values of other variables (Cameron and Trivedi, 2005).

From the missing value analysis, there are missing values in the continuous variables, parents' income, and CGPA. Firstly, the missing data of parents' income may depend on the parents' job. For example, self-employed parents may not have a fixed income and unemployed parents do not have income. Respondents might also not be clear about their parents' income. Thus, the missing value of parents' income can be considered as MAR. Secondly, there are missing values in CGPA. CGPA is not related to any other questions in the questionnaire. Some of the respondents may feel that their CGPA is private and choose not to answer the CGPA achieved in the questionnaire. So, CGPA is considered as MCAR because it does not depend on any other variables in the dataset.

Table 4.1
Missing values

Independent Variables	Frequency
Parents' income	103
CGPA	9
Total	**112**

The number of univariate and multivariate outliers are determined after replacing the missing values in the data set. Table 4.2 shows the number of outliers in the dataset. Outliers represent the undesirable and extreme responses. Univariate outliers are cases with the large standardized scores, *z* value. The *z* value is a set of scores that have the same mean and standard deviation. It shows the probability of the scores occurring within the normal distribution. Cases with *z* value ±3.29 are potential

outliers (Tabachnick & Fidell, 2007). The dependent variable in this study does not have outliers. Independent variables, including parents' education background, parents' income and CGPA have outliers. Specifically, parents' education background has two univariate outliers, parents' income has five univariate outliers, and CGPA has one univariate outliers.

The multivariate outlier is detected using the Mahalanobis value. The Mahalanobis value refers to the distance of an item from the centroid of the remaining items, in which the centroid is created by the intersection of means of all the variables in the dataset. Looking at the 1 per cent level (with df=12) in the Chi-Square probabilities table, the suggested threshold of chi-square is 26.217. Any observations with the Mahalanobis value of greater than 26.217 are considered as multivariate outliers. With this threshold, two observations were found with a Mahalanobis value greater than 26.217.

There are 10 outliers in the data set. Outliers are cases that do not represent any observations in the population. They are excluded from the dataset. This is because of the parametric statistics, for example, mean and standard deviation are highly sensitive to outliers. The presence of outliers would reduce the precision of the regression results in this study. Thus, these 10 observations are excluded from the dataset.

Table 4.2
Outliers

Outliers	Frequency	Cases with outliers[6]
Univariate outliers		
Parents' education background	2	220, 765
Parents' income	5	203, 459, 494, 544, 793
CGPA	1	465
Multivariate outliers	2	579, 607
Total	10	

4.2 Descriptive Analysis

Table 4.3 shows the summary statistics of the independent variables. The first two columns show the percentage of respondents who intended to further their studies, or otherwise, according to their characteristics. The respondents in this study were varied in terms of CGPA achieved, parents' education background, parents' income, higher education financing method, employment status, program discipline, gender, and age. Among the 447 undergraduate graduands, about 49.4 per cent and 50.6 per cent of them intended to further their studies and did not intend to further their studies, respectively.

Parents' income, CGPA, and age are continuous variables in this study. On average, the parents' income is RM 2698 and RM 3174.10, for undergraduates who intended to further their studies, and did not intend to further their studies, respectively. The performance of undergraduates is measured by the CGPA achieved.[7] The average

[6] Cases are the questionnaire's ID.
[7] According to the graduation rules for Bachelor Degree (with Honors) in UUM, the divisions of Honors that will be awarded are as follows, First Class Honors (CGPA 3.67-4.00), Upper Second Class (CGPA 3.00-3.66), and Lower Second Class (2.00-2.99).

CGPA achieved by the undergraduates who intended to further their studies in a Master's Degree is about 3.37. Age and gender are control variables. The average age of these two groups was about 26 years old. The percentage of females (51.2 per cent) that intended to further their studies is higher than males (44.9 per cent).

Regarding the family-related variables, among the undergraduate graduands who had the intention to further their studies, about 56 per cent of them have university-educated parents, while 48 per cent do not have university-educated parents. On the other hand, among the undergraduates who did not intend to further their studies, about 45 per cent of them have university-educated parents, while about 52 per cent of them do not have university-educated parents. This shows that undergraduates with university-educated parents are more likely to further their studies.

With regards to the academic-related variables, the higher education financing methods are study loans, scholarships, self-funded and mixed. As the self-funded and mixed methods have relatively few observations, they are pooled into one category as "other financing method". So, higher education financing method is categorized into three groups. Among the higher education financing methods, 66.7 per cent of the undergraduates who received a scholarship intended to further their studies, compared to undergraduates who received a study loan (48.9 per cent). Regarding the program studied, more than three quarters of the respondents studied a business-related program. Among the two program disciplines, about 47 per cent of undergraduates who studied a business-related program intended to further their studies, while about 59 per cent undergraduates studied a non-business-related program.

Employment status is the individual-related factor in this study. More than half of the employed undergraduates intended to further their studies. 52 per cent of the respondents was employed at the time they responded to the questionnaire.

Table 4.3
Summary statistics

Variables	Intend to further studies	Do not intend to further studies	All
Continuous Variables			
Parents' income[a]	2698.00	3174.10	-
CGPA[a]	3.37	3.44	-
Age[a]	26	26	-
Dummy Variables			
Family-related variables			
Having university-educated parents	49 (55.7)	39 (44.3)	88 (100)
Not having university-educated parents[b]	172 (47.9)	187 (52.1)	359 (100)
Academic-related variables			
Study loan	176 (49.0)	183 (51.0)	359 (100)
Scholarship	24 (66.7)	12 (33.3)	36 (100)
Other financing methods[b]	21 (40.4)	31 (59.6)	52 (100)
Business-related	153 (45.5)	183 (54.5)	336 (100)
Non-business-related[b]	68 (61.3)	43 (38.7)	111 (100)
Control Variables			
Male[b]	57 (44.9)	70 (55.1)	127 (100)
Female	164 (51.2)	156 (48.8)	320 (100)
Total	*N*= 221(49.4)	*N* =226(50.6)	*N* =447 (100)

Note: [a]Figures in means; the number of observations otherwise. Percentages are in the parentheses. [b]base group for dummy variable. ***Significant at the 1 per cent level, **Significant at the 5 per cent level.

4.3 Diagnostic Checking

Before conducting the regression analysis, diagnostic checking is needed to be carried out to check the existence of the biasness problem. VIF test is conducted to detect the existence of the biasness problem, multicollinearity. It shows how the variance of an estimator is inflated by the presence of multicollinearity. A VIF value lower than 5 means that there is low collinearity among variables in the model (Gujarati, 2004). Table 4.4 presents the results of the VIF test. A study loan has the highest VIF value, which is 1.74. However, all the VIF values are lower than 5. The average VIF is 1.24. Thus, it can be concluded that the biasness problem, multicollinearity does not exist in the model.

Table 4.4
VIF test

Variables	VIF
Having university-educated parents	1.14
Parents' income	1.23
CGPA	1.12
Study loan	1.74
Scholarship	1.68
Employed	1.04
Business-related program	1.09
Age	1.07
Female	1.03
Average VIF	**1.24**

4.4 Inferential Analysis

Table 4.5 shows the results of four model specifications in this study. Specification (1) - (3) estimates the marginal effect of each related factors individually. Specification

(4) includes all the related factors. Age and gender are employed as control variables in all the four model specifications.

Specification (1) shows that parents' education background and parents' income are statistically significant at the 10 per cent and 1 per cent level, respectively. Specification (2) shows that only three of the academic-related variables are statistically significant. CGPA, scholarship and business-related programs are significant at the 1 per cent level. Results in the specification (3) shows that the individual-related factor has no statistical significance at the 10 per cent level.

Specification (4) is the main model specification in this study. All the family-related, academic-related, and individual-related factors are included in this specification. There are four significant variables in this specification. CGPA, scholarship and program are statistically significant at the 5 per cent level. Parent's education background, parent's income, employment status, gender, and age are statistically insignificant. This suggested that the impact of the academic-related factors is relatively greater than family-related factors and individual-related factors.

The results of the goodness-of-fit tests show that the Pearson chi-square is insignificant. Thus, it can be concluded that the data in this study is well fitted in all the specifications. The detailed regression results of all the specifications are attached as Appendix C.

Table 4.5

Marginal effect on the outcome probabilities of the undergraduates' intention to further studies

	(1)		(2)		(3)		(4)	
Independent variables	M.E	s.e.	M.E.	s.e.	M.E.	s.e.	M.E.	s.e.
Family-related factors								
Having university-educated parents	0.1200***	0.0616					0.0834	0.0650
Parents' income	-0.0001**	0.0000					-0.0001	0.0000
Academic-related factors								
CGPA			-0.2221*	0.0864			-0.1871**	0.0886
Study loan			0.0644	0.0776			0.0457	0.0810
Scholarship			0.2775*	0.0902			0.2468**	0.0978
Business-related program			-0.1478*	0.0555			-0.1355**	0.0570
Individual-related factors								
Employed					0.0564	0.0475	0.0341	0.0495
Control Variables								
Female	0.0481	0.0532	0.0697	0.0539	0.0630	0.0524	0.0581	0.0547
Age	0.0035	0.0144	0.0041	0.0149	0.0042	0.0144	0.0054	0.0150
Goodness-of-fit (Prob>chi2)	0.2657		0.3048		0.1061		0.3673	

Notes: Dependent variable = Intention of undergraduates to further studies, *N*=556, M.E. = Marginal effect, s.e. = Standard error, ***Significant at the 1 per cent level, **Significant at the 5 per cent level, ***Significant at the 10 per cent level. Specification (1) includes family-related factors, specification (2) includes academic-related factors, specification (3) includes individual-related factors, and specification (4) includes all three-related factors. Control variables are included in all the specifications.

4.5 Model Estimation Results

4.5.1 Impact of the Family-related Factors

(i) Parents' Education Background

The results show that parents' education background is positively associated with the intention of undergraduates to further their studies. The impact of parents' education background has no statistically significant association with the intention of undergraduates to further their studies.

It is said that college-educated parents are more aware of the long-term impacts of accessing a college degree, and they share education information with their children. Highly educated parents provide greater support to their children. On the other hand, parents who have not attended college have less direct knowledge of the benefits of higher education. Students whose parents never attended college sometimes face difficulties in sharing information about higher education with their children (Nelson, 2009).

This insignificant association is supported by a recent study conducted by Siti and Koe in 2012. By using a total of 670 undergraduates in a public university located at the southern part of Malaysia, they found that family influence has no significant role in affecting the undergraduates' decision to further their studies. They explained that undergraduates were able to make the educational decision by themselves.

On the other hand, this finding contradicts to some of the previous studies. Liu and Morgan (2015) found that parents who had a university education background were able to influence the undergraduates' educational decision and learning habits.

Tamara (2002) found that students with highly educated parents were more likely to pursue a university education. Ann et al. (2003) identified that there is a significant positive impact of parents' education background and postgraduate enrollment.

(ii) Parents' Income

The results show that parents' income has no statistical significant impact to the intention of undergraduates to further studies. There is no doubt that family income has an impact to children's education. There are part-time and full-time Master's Degree studies in Malaysia. A postgraduate student can finance the cost in postgraduate studies from their income, financial support (scholarship or study loan) from the government, or savings. Thus, family income does not significantly influence the intention of an undergraduate to further their studies in a Master's Degree.

However, the negative and insignificant impact of parents' income in this study contradicts with the results in the previous studies. Previous scholars found positive impacts of their parents' income. Tamara (2002) examined the impact of parents' income on the postgraduate enrollment rate. He found that students with high income parents were more likely to further studies.

Zhang (2004) found that a higher income is positively associated with a higher probability of postgraduate enrollment. Acemoglu and Pischke (2010) found that an increase in the parents' income had a large impact to the probability of attending university education.

4.5.2 Impact of the Academic-related Factors

(i) CGPA

The results show that CGPA is statistically significant to influence the intention of undergraduates to further their studies. The marginal effect of CGPA is -0.1871. CGPA is significant at the 5 per cent level. A one unit increase in the CGPA decreases the outcome probability of undergraduates to further their studies by 0.1871 percentage point. This shows that undergraduates with a high CGPA are more likely to find a job rather than further their studies in a Master's Degree.

The negative association between CGPA and undergraduates' intention may be due to the perception of employers in the labor market. In Malaysia, employers today are seeking for fresh graduates with specific skills and the ability in solving problems. The first criteria by employers in Malaysia is working experience (Ken and Cheah, 2012). Since working experience is demanded by the employers, high performance undergraduates are unlikely to further their studies. This is because they would choose to gain more working experience. Undergraduates who achieved a First-class Honours are more competitive compared to other undergraduates. They are more likely to be employed compared to other fresh graduates. Employed undergraduates would feel that a higher level of education is not needed for them to have a job in the labor market. Thus, high-performance undergraduates in Malaysia are less likely to further their studies.

However, the negative impact of CGPA in this study is inconsistent with the findings in previous studies. Previous literature showed that high academic

performance undergraduates tend to further their studies in a Master's Degree. For example, Zhang (2004), Ann et al. (2003), and Cormick et al. (1999).

Zhang (2004) said that CGPA is a strong predictor of the Master's Degree enrollment rate. Students who achieved better in their undergraduate studies are more likely to further their studies. He found that a one unit increase in CGPA increases the probability of undergraduates to further their studies by 22 per cent.

Ann et al. (2003) also found that CGPA achieved in undergraduate studies is a strong indicator of the continuation in postgraduate studies. Students who are the most likely to apply for admission in postgraduate studies are those who performed well during their undergraduate studies. Their findings show that a one unit increase in CGPA raises one's odds of the admission in the Master's Degree by 13 percent.

Cormick et al. (1999) found that the undergraduate CGPA is positively associated to the postgraduate enrollment. They found that undergraduates who achieved a CGPA of 3.5 or above were more likely to further their studies in a Master's Degree compared to undergraduates who achieved a lower CGPA.

(ii) Study Loan and Scholarship (during undergraduate studies)

The undergraduate scholarship is statistically significant at the 5 per cent level. The marginal effect of scholarship is 0.2468. It is positively associated with the intention of undergraduates to further studies. By using a scholarship to finance undergraduate studies, the outcome probability of undergraduates to further their studies increases by

0.2468 percentage point. However, the result shows that study loans have no significant impact on the outcome probabilities of undergraduates to further studies.

The undergraduate study loan is a type of debt burden after the completion of undergraduate studies. Thus, undergraduates with study loans are less likely to further their studies. Scholarships help students, especially students from a lower-income family. Students who receive scholarships are more likely to further their studies. Scholarships increase students' persistence and success. With a scholarship, students spend lesser time in work, and will have more time for their academic work. They added that scholarships have two benefits for a university. It attracts stronger students and promotes better performance of a university (Dooley, Payne & Robb., 2013). The costs of financing higher education are increasing. The costs of attending postgraduate studies are significantly higher than the average tuition costs for undergraduate studies. Undergraduates who graduated with First-class Honours have the chance to waive the repayment of their study loan (i.e. PTPTN). Scholarship holders have a lower debt burden compared to study loan holders (Choy and Li, 2006).

There are previous scholars who examined the impact of undergraduate study loan debt on postgraduate enrollment. They found that study loan debts influenced the undergraduates' intention to further their studies in a Master's Degree. Cormick et al. (1999) found that undergraduates with a high level of study loan debt were less likely to further their studies in a Master's Degree. Years later, Millet (2003) also found that undergraduates with a study loan debt were less likely to further their studies in a Master's Degree. Baum and Saunders (1998) found that an undergraduate study loan debt affects an individual's plan to attend postgraduate studies.

(iii) Program

The results show that a business-related program is significant to influence undergraduates' intention to further their studies compared to a non-business-related program. It is significant at the 5 per cent level. The marginal effect of the business-related program is -0.1355. This shows that studying a business-related program as their undergraduate studies decreases the probability of undergraduates to further their studies by 0.1355 percentage point.

Undergraduates who graduated in a business-related program would seek for a job, for example, in human resource, marketing, and sales. Generally, there are eight skills that employers demand in the labor market, namely communication, teamwork, problem solving and self-management. The main concern to work in a business company is the working experience embodied in workers themselves. The application of the theories learned in undergraduate studies should be applied in the working place. For business program students, the best way to apply those theories is to gain more working experience in their work. Having great working experience would help in bargaining and completing a business with customers. Thus, they are unlikely to further their studies.

One of the reasons is that a period of working experience is usually needed to enroll in the business program in postgraduate studies. Zhang (2004) studied the effect of undergraduate majors to the postgraduate studies. He found that business-related program undergraduates are unlikely to study for a Master's Degree. Compared to undergraduates who major in other programs, undergraduates who studied in a

business program were unlikely to further their studies in a Master's Degree. On the other hand, students from other majors, for example, education, mathematics, and psychology, are more likely to further their studies.

As an example, an individual who works in a technology company would need a high-level knowledge and understanding of technology. At a bachelor's level, undergraduates would learn only the basic concepts of software development and theory. For instance, program coding and machine language. Students would learn more deeply about the focused topics when studying at the level of a Master's Degree. A major benefit of the graduate level is the establishment of a development team, where students have the chance to collaborate with other people and use different people's code. Thus, undergraduates from a non-business program would be more likely to further their studies. From the survey conducted by the Higher Education Careers Service Unit (HECSU) in 2014, it is found that the government in UK is encouraging undergraduates who studied a Science, Technology, Engineering, and Mathematics (STEM) program to further their studies. The government encourages STEM students to study at a more advanced level to meet employment demand (HECSU, 2014).

4.6 Conclusion

This chapter has discussed the descriptive and inferential findings of this study. The summary statistics and model estimation results are presented. Three independent variables, including, CGPA, scholarship, and business-related program are significant to influence the dependent variable. Results from the VIF test reports that the

multicollinearity does not exist in the model. The next chapter presents the discussion from findings in terms of research objectives.

CHAPTER FIVE

CONCLUSION

This chapter concludes the findings of the study in terms of research objectives. The findings in this study provide some insights on the policy suggestions. This chapter also presents the limitations of this study, followed by the conclusion. Specifically, this chapter is divided into four main sections. Section 5.1 presents the conclusion from the results and findings. The research questions are answered in this section. Section 5.2 provides the suggestions and policy implications, while Section 5.3 presents the limitations of this study.

This study has examined the factors affecting the intention of undergraduates to further their studies. The logistic regression model is employed to analyze the specified model. The specified model was developed based on the three oriented factors including family, academic, and individual-related factors. Among the independent variables, there are three significant independent variables. Based on the results, CGPA, scholarship, and program can significantly influence the intention of undergraduates to further their studies, while parents' education background, parents' income, previous study loan, and employment status are insignificant.

5.1 Conclusion from Results and Findings

The main research objective is to examine the significant factors that affect the intention of undergraduates to further their studies. The findings from the logistic regression analysis show that undergraduate CGPA, previous scholarship, and a business-related program are significant to influence the intention of undergraduates

to further their studies. Parents' education background, parents' income, previous study loan, and employment status are insignificant.

The first specific research objective is to investigate the role of CGPA in affecting undergraduates' intention to further studies. The result from the regression analysis shows that CGPA has a role in affecting the undergraduates' intention to further their studies at the 5 per cent level. Unlike the results from previous studies, the findings in this study show that the CGPA achieved in the undergraduate studies is negatively associated to the undergraduates' intention to pursue their studies in a Master's Degree. This implies that undergraduates with a high CGPA are less likely to further their studies in a Master's Degree.

The second specific research objective is to examine the impact of employment status. The result shows that employment status has no statistically significant influence on the intention of undergraduates to further their studies.

The third specific research objective is to identify whether undergraduates who received scholarship and study loan from the government during undergraduate studies intend to further their studies, or not. Results show that having a previous scholarship is statistically significant to influence the undergraduates' intention to further their studies, while a previous study loan is insignificant. Undergraduates who received a scholarship from the government are more likely to further their studies. Among the undergraduates who received a scholarship, about 67 per cent of them intended to further their studies. On the other hand, only 49 per cent of the undergraduates who received study loans intended to further their studies.

The fourth specific research objective is to investigate the effect of parent's income on the undergraduates' intention to further their studies. Results showed that parent's income has no statistical significant impact to the undergraduate's intention to further their studies in a Master's Degree.

5.2 Policy Implications and Suggestions

The Malaysia Tracer Study Reports show that the number of undergraduates and Master's Degree graduates produced in recent years has increased. There is a big difference in the number of the undergraduates and Master's Degree graduates produced. The rate of the increment in the Master's Degree graduates decreased in recent years. The factors associated with the intention of undergraduates to further studies are important to be determined. The results of this study provide some information to the society, including the government, education institutions, parents, and graduates. The results in this study imply that academic-related factors are more important compared to the family and individual-related factors. These findings have several significant implications. However, there is a limitation of the suggestion provided due to the characteristics of the sample used in this study.

5.2.1 Suggestion for the Malaysian Government

The first suggestion from the results in this study is from a financial perspective. Results show that the study loan debt in higher education is one of the concerns for undergraduates to further their studies. Scholarships are significant in affecting the undergraduates' intention to further their studies. A huge amount of budget is allocated by the Malaysian government in preparing scholarships. Financial support for students in Malaysia is in terms of scholarships (i.e. MyBrain and Malaysia International

Scholarship) and study loans (i.e. PTPTN). The Malaysian government started the implementation of Mybrain in 2015 to support the Malaysian undergraduates to further their studies in a Master's Degree. Scholarships are important for students. This is because financing the costs in postgraduate studies by a study loan increases the number of study loans of a student. It cannot be denied that study loans help in reducing the financial burden for students during their study period. However, it becomes a financial burden after their graduation.

There are benefits in preparing scholarships for students. The first benefit goes to the university. Scholarships attract better performance students and promotes the university's performance (Dooley et al., 2013). With scholarships, students do not need to worry about paying their tuition fees and their daily expenses. Students can focus on their studies. For example, students may have more time in preparing for their examinations, assignments, and research papers. The availability of scholarships will decrease the amount of loans that students need to repay after the completion of their higher education. A student with a study loan would have stresses and cause them to be unable to focus on their studies. So, this study suggested that more scholarships should be established by both public and private sectors.

5.2.2 Suggestion for Universiti Utara Malaysia

The second suggestion from the results is from the perspective of academic performance. The results showed that undergraduates who achieved a high CGPA were less likely to further their studies in a Master's Degree. This is implied by the negative marginal effect of CGPA. However, undergraduates who achieved higher grades are important for a university. The CGPA achieved during undergraduate

studies provides confidence for an undergraduate to face the challenges of postgraduate studies. They are more likely to perform well in postgraduate studies and raise the reputation of a university (Zhang, 2004).

To attract high performing undergraduates, university authorities are suggested to provide more incentives, such as discounts on tuition fees. The tuition discounting is an award to help high-performance students who face difficulties in paying tuition fees. A few dimensions should be reviewed while considering the application of students, for example, family income and semester results. To ensure the outcome of this award, the academic performance of students should be monitored every semester. This study suggested that universities should attract and retain undergraduates with a high CGPA to further their studies in a Master's Degree by providing more incentives.

5.3 Study Limitations

Although all the research objectives of this study were achieved successfully, this study is presented with several limitations. Further work is necessary to be carried out to examine the factors associated with the undergraduates' intention.

The first limitation is the cooperation of respondents. There were respondents who did not provide complete information, such as their parent's income and parent's education background. This is because they do not have the information on the actual income and education background of their parents. There were also respondents who did not provide their own information, such as the CGPA achieved. There were also respondents who did not answer the question regarding to the dependent variable,

which is their intention to further studies. This has reduced the total number of usable responses that could be included in the analysis.

The second limitation of this study is the characteristics of the respondents. The sample is limited by involving only the UUM undergraduate graduands. The analyzed results would only show the factors affecting UUM undergraduate graduands to further their studies. It does not represent all the undergraduates in Malaysia. All 447 respondents were in a similar age range, between 26 and 28. It cannot be denied that there is a gender gap in the university. The sample in this study is dominated by female undergraduates. Future researchers should include undergraduates from different universities and age group.

The third limitation of this study is the number of relevant previous studies. It cannot be denied that there were a lot of previous studies on the decision of furthering studies. Previous literature focused on the decision of furthering studies from a secondary school level to undergraduate studies. Lack of previous studies could be used as the references in this study.

Overall, even with the limitations in this study, the collected data in this study fits the model. Future research can be conducted to overcome these limitations. However, this study has successfully contributed to the government sector on the importance of scholarships for university students to finance their costs in postgraduate studies. Also, this study provides some insights for the higher education institutions that high-performance undergraduates are less likely to further their studies. Universities should provide more incentives to attract undergraduates with a

high CGPA to further their studies. This is because they are more likely to have better performance and increase the reputation of the university. The findings of this study would help the higher education management to improve the enrollment rate of postgraduate studies in Malaysia.

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APPENDIX A

List of Selected Questions

Demographic Background

1. Gender:
   □ Male □ Female

2. Date of birth: _____

3. Ethnicity:
   □ Malay □ Chinese □ Indian
   □ Others (please specify): _____

Dependent Variable

1. Do you have any plans for further studies in near future?
   □ Yes □ No

Individual-related factors

1. What is your current employment status?
   □ Full-time
   □ Part-time
   □ Self-employed
   □ Unemployed
   □ Economically inactive (eg. housewife, not seeking jobs in near future)

Family-related Factors

1. What is your parents' current job? Please tick where appropriate.

Father	Mother	
□	□	Civil servant
□	□	Private sector employee
□	□	Self-employed
□	□	Government retiree
□	□	Private sector retiree
□	□	Housewife
□	□	Unemployed
□	□	Others (please specify): Father _____ Mother _____

2. Please indicates the highest level of formal education achieved by your parents.

Father	Mother	Level of formal education
□	□	No formal education
□	□	Less than secondary school
□	□	Some secondary school
□	□	Complete secondary school
□	□	LCE/SRP/PMR
□	□	HSC/STPM/ A-Level/Diploma
□	□	Bachelor degree

□	□	Masters' degree
□	□	PhD degree
□	□	Others (please specify): Father _____
		Mother_____

3. What is your parents' monthly income?

□ Father: RM _____ □ Mother: RM _____

4. What is your parents' current job? Please tick where appropriate.

Father	Mother	
□	□	Civil servant
□	□	Private sector employee
□	□	Self-employed
□	□	Government retiree
□	□	Private sector retiree
□	□	Housewife
□	□	Unemployed
□	□	Others (please specify): Father _____
		Mother _____

5. Please indicates the highest level of formal education achieved by your parents.

Father	Mother	Level of formal education
□	□	No formal education
□	□	Less than secondary school
□	□	Some secondary school
□	□	Complete secondary school
□	□	LCE/SRP/PMR
□	□	HSC/STPM/ A-Level/Diploma
□	□	Bachelor degree
□	□	Masters' degree
□	□	PhD degree
□	□	Others (please specify): Father _____
		Mother _____

3. What is your parents' monthly income?

□ Father: RM _____ □ Mother: RM _____

Academic-related Factors

1. Name of Bachelor degree programme: _____

2. Overall CGPA: _____ (eg. 3.25 out of 4.00)

3. Your higher education financing method (total cost including fees, living expenditure etc):

   □ 100% Loan

   □ 100% Scholarship

   □ 100% Self-funded

   □ Mixed

4. Please provide the information of the study loan that you obtained for your higher education.

a) Which sector offered you your study loan?

   □ Government sector □ Private sector

b) What is the total amount of your study loan?

   RM_____

c) Did your study loan convertible to scholarship?

   □ Yes □ No

d) Please state the convertible condition. _____

e) Please provide the information for the repayment of your study loan.

   i) Interest rate: _____

   ii) Installment: _____

   iii) Duration: _____

5. Please provide the information of the scholarship that you obtained for your higher education.

a) Which sector offered you your scholarship?

   □ Government sector □ Private sector

b) What is the total amount of your scholarship?

   RM_____

c) Is there any employment contract for your scholarship?

   □ Yes □ No

APPENDIX B

Schedule of UUM Robe Collection Week

Date	Program
7/11/2016	Decision Science Business Mathematics Industrial Statistics Public Management Development Management
8/11/2016	International Business Management International Affairs Management Law Social Work Management Counselling Communication Multimedia Technology Media Information Technology
9/11/2016	Tourism Management Hospitality Management Accounting Accounting Information System
10/11/2016	Muamalat Administration Islamic Finance and Banking Business Administration Human Resource Management Marketing Entrepreneurship
11/11/2016	Economics Agribusiness Management Finance Banking Risk Management and Insurance Technology Management Operation Management Business Administration (Logistics & Transportation)

APPENDIX C

Model Specification (1)

```
Logistic regression                                     Number of obs   =        447
                                                        LR chi2(4)      =       9.70
                                                        Prob > chi2     =     0.0458
Log likelihood = -304.95967                             Pseudo R2       =     0.0157
------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        PEDU |   .4845487    .253314     1.91   0.056    -.0119376    .9810351
          PI |   -.000114   .0000457    -2.50   0.013    -.0002035   -.0000245
         FEM |   .1926752   .2138411     0.90   0.368    -.2264456     .611796
         AGE |  -.0138326   .0575313    -0.24   0.810    -.1265919    .0989268
       _cons |   .4401955   1.521668     0.29   0.772     -2.54222    3.422611
------------------------------------------------------------------------------


Logistic model for Y, goodness-of-fit test

      number of observations =       447
 number of covariate patterns =       201
           Pearson chi2(196) =       207.96
                 Prob > chi2 =         0.2657


Marginal effects after logit

------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
    PEDU*|   .1200992      .06162    1.95   0.051  -.000679  .240878   .196868
      PI |  -.0000285      .00001   -2.50   0.013  -.000051 -6.1e-06   2938.76
     FEM*|   .0480803      .05321    0.90   0.366  -.056204  .152364   .715884
     AGE |  -.0034577      .01438   -0.24   0.810  -.031644  .024728   26.1969
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

Model Specification (2)

```
Logistic regression                                     Number of obs   =        447
                                                        LR chi2(6)      =      23.38
                                                        Prob > chi2     =     0.0007
Log likelihood = -298.11782                             Pseudo R2       =     0.0377
------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        CGPA |  -.8885256   .3455861    -2.57   0.010    -1.565862   -.2111894
          SL |   .2585922   .3136257     0.82   0.410    -.3561029    .8732873
         SCH |   1.206086   .4655669     2.59   0.010     .2935914     2.11858
         BRP |  -.5980722   .2303135    -2.60   0.009    -1.049478    -.146666
         FEM |   .2796836   .2176612     1.28   0.199    -.1469244    .7062917
         AGE |  -.0167733   .0596684    -0.28   0.779    -.1337212    .1001746
       _cons |    3.39069   2.121448     1.60   0.110    -.7672711    7.548651
------------------------------------------------------------------------------

Logistic model for Y, goodness-of-fit test

       number of observations =       447
 number of covariate patterns =       327
            Pearson chi2(320) =       332.41
                  Prob > chi2 =         0.3048

Marginal effects after logit
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]       X
---------+--------------------------------------------------------------------
    CGPA |  -.2221062      .08638   -2.57   0.010  -.391418 -.052795   3.40796
      SL*|   .0643987      .07758    0.83   0.406   -.08766  .216457   .803132
     SCH*|   .2775133      .09015    3.08   0.002   .100815  .454212   .080537
     BRP*|  -.1478094      .05555   -2.66   0.008  -.256676 -.038943   .751678
     FEM*|   .0696914      .05393    1.29   0.196  -.036001  .175384   .715884
     AGE |  -.0041929      .01492   -0.28   0.779  -.033427  .025041   26.1969
```

```
------------------------------------------------------------------------------
---
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

Model Specification (3)

```
Logistic regression                                     Number of obs   =        447
                                                        LR chi2(2)      =       4.41
                                                        Prob > chi2     =     0.1104
Log likelihood = -307.44408                             Pseudo R2       =     0.0071

------------------------------------------------------------------------------
         EMP |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
         AGE |    .153287   .0902141     1.70   0.089    -.0235293    .3301033
         FEM |   .0903781    .210449     0.43   0.668    -.3220944    .5028506
       _cons |   -4.01521   2.359943    -1.70   0.089    -8.640614    .6101943
------------------------------------------------------------------------------
```

```
Logistic model for EMP, goodness-of-fit test

      number of observations =       447
 number of covariate patterns =        16
           Pearson chi2(13) =         9.16
                 Prob > chi2 =       0.7607
```

```
Marginal effects after logit
------------------------------------------------------------------------------
variable |      dy/dx    Std. Err.      z    P>|z|  [    95% C.I.   ]      X
---------+--------------------------------------------------------------------
     AGE |   .0382811      .02252    1.70   0.089  -.005856  .082419   26.1969
     FEM*|   .0225789      .05258    0.43   0.668  -.080479  .125637   .715884
------------------------------------------------------------------------------
(*) dy/dx is for discrete change of dummy variable from 0 to 1
```

Model Specification (4)

```
Logistic regression                                     Number of obs   =        447
                                                        LR chi2(9)      =      26.46
                                                        Prob > chi2     =     0.0017
Log likelihood = -296.57984                             Pseudo R2       =     0.0427
------------------------------------------------------------------------------
           Y |      Coef.   Std. Err.      z    P>|z|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
        PEDU |   .3349336   .2630948     1.27   0.203    -.1807227    .8505899
          PI |  -.0000647   .0000484    -1.34   0.181    -.0001595    .0000301
        CGPA |   -.748516   .3545921    -2.11   0.035    -1.443504   -.0535283
          SL |   .1834132   .3258405     0.56   0.574    -.4552225     .822049
         SCH |   1.051893   .4759082     2.21   0.027     .1191299    1.984656
         BRP |  -.5471962    .234866    -2.33   0.020    -1.007525   -.0868673
         EMP |   .1365631    .198138     0.69   0.491    -.2517803    .5249066
         FEM |   .2331501   .2203263     1.06   0.290    -.1986815    .6649818
         AGE |  -.0216964   .0599745    -0.36   0.718    -.1392442    .0958513
       _cons |    3.16334   2.138254     1.48   0.139     -1.02756    7.354241
------------------------------------------------------------------------------
```


Logistic model for Y, goodness-of-fit test

```
       number of observations =       447
 number of covariate patterns =       438
            Pearson chi2(428) =    437.32
                  Prob > chi2 =    0.3673
```

Marginal effects after logit

y = Pr(Y) (predict)

= .49443906

variable	dy/dx	Std. Err.	z	P>|z|	[95% C.I.]		X
PEDU*|	.083408	.06495	1.28	0.199	-.043896	.210712	.196868
PI |	-.0000162	.00001	-1.34	0.181	-.00004	7.5e-06	2938.76
CGPA |	-.1871059	.08864	-2.11	0.035	-.360828	-.013383	3.40796
SL*|	.045752	.08099	0.56	0.572	-.112987	.204491	.803132
SCH*|	.2468096	.09779	2.52	0.012	.055143	.438476	.080537
BRP*|	-.1355082	.05699	-2.38	0.017	-.247206	-.02381	.751678
EMP*|	.0341225	.04947	0.69	0.490	-.062833	.131078	.514541
FEM*|	.0581453	.05472	1.06	0.288	-.049107	.165397	.715884
AGE |	-.0054234	.01499	-0.36	0.718	-.034807	.02396	26.1969

(*) dy/dx is for discrete change of dummy variable from 0 to 1